

Kinetic Family Drawing Comparisons of Students who are Deaf with Signing Parents
and Students who are Deaf with Non-signing Parents

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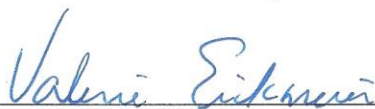


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Abstract

This study evaluated the differences in the Kinetic Family Drawing (KFD) of two groups of students who are Deaf: one with signing parents, and the other with non-signing parents. Participants included 14 students who were Deaf from a large Midwestern metropolitan area school specifically serving Deaf people, from middle school to high school, ranging in age from 12 to 19 years old. The questions to be addressed were: Will there be a difference in drawing indicators of those students with signing parents when compared to those students with non-signing parents? Could those differences indicate possible struggles in cognitive and psychosocial developments of those with non-signing parents? To answer this question, three raters, were trained to use the Formal Elements Art Therapy Scale (FEATS) evaluation process to objectively rate the students' KFDs. A t-test of the results determined that there was a significant difference between the two groups. Further analysis of elements discovered in the KFDs also presented several themes from the non-signing group indicating that the differences may be due to inadequate development of cognitive and psychosocial aspects of the students with non-signing parents.

The study drew comparisons from specific FEATS categories to provide art therapists and clinicians with data that may be useful in evaluating a Deaf individual's family support as well as his/her abilities in the areas of coping, problem solving, and interaction with other people. Future studies that include participation by students outside the school may solicit richer data, permitting generalizations of results to specific groups.

Keywords: Deaf children, sign language, signing parents, non-signing parents, Kinetic Family Drawing (KFD), Formal Elements Art Therapy Scale (FEATS)

Dedication

This thesis is dedicated to my family, Linda, Jay, Sami, and Wanda, and my significant other, Peter. You have supported me throughout the hardest two years of my life. Thank you for helping me achieve my goal and for giving me the skills I needed to be able to create new paths in society for other Deaf people like myself that can, indeed, do *anything*.

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Chapter 1: Introduction

Every individual comes from a family of some kind: traditional and non-traditional families, single-parent families, and new immigrant families are some examples. “The family is the most ancient and fundamental form of human social organization” (Fan, 2012, p. 175). Every family develops its own unique culture that includes values, beliefs, and modes of language/communication. This distinctive culture helps create “the experience of early family life [which] has a major impact on children’s physical and emotional development, on their development of interpersonal relations skills, and on the development of their personality” (Fan, 2012, p. 175). Families who have children with different needs often have even more unique cultures, but when the child’s physical and emotional needs are satisfied, they are capable of achieving complete development in all areas.

Statistics indicate that more than 12,000 babies are born deaf every year in the United States (Newborn Hearing, 2012). More than 90% of deaf children are born to hearing parents (Sinkkoken, 1996). These children are significantly impacted by their family culture, including choices about modes of communication. Frequently, parents who learn that their child is deaf educate themselves on approaches to best support and nurture their child. Some learn that “the most adequate means of linguistic communication for a deaf or severely hard of hearing child is sign language” (Sinkkoken, 1996, p. 104). However, not all hearing parents choose to utilize sign language, instead choosing other communication modes. The parents’ attitude and choices about the upbringing, and particularly communication modes, of the child become crucial for the child’s development in all areas (Fan, 2012).

Both hearing and D/deaf parents are capable of incorporating ASL within the family as a mode of communication for the deaf child. However, in contrast to children born to hearing

parents, deaf children who are born to Deaf parents are typically exposed to American Sign Language (ASL) from birth. For most people who are Deaf and immersed in Deaf culture, the daily use of ASL provides access to a vibrant form of visual communication:

This silent language of the Deaf vibrates through space as a three-dimensional language system, which arcs in past, present, and future just by mere body positioning and facial expression. It is a magical language, which crosses culture and is indeed classified, codified, and uniquely its own system. (Horovitz, 2007, p. 5)

Kolod (1994) discussed that for many hearing parents of children who were deaf, the discovery of the deafness caused struggles in the parent/child relationship, leading to feelings of anxiety, inadequacy, disappointment, frustration, and guilt. Due to the ongoing struggles in the parent/child relationship, the child passed critical developmental stages without being able to communicate and discuss abstract ideas, feelings, and information about the world such as reality and fantasy. Kolod (1994) showed that with a lack of a common language at home, those deaf children faced challenges such as parental disconnectedness, emotional distance, language access, developing an identity as a person who was Deaf, and lack of exposure to Deaf culture.

Researchers have conducted a variety of studies to explore this developmental aspect of the child's psychological state. The studies used a variety of approaches, including surveys, interviews, and art making. With respect to psychological analysis of children's drawings and the use of art in psychological therapy, "many art educators, other educators and psychologists have sought to leverage children's highly imaginative creative work to explore children's feelings and emotions, their concept of the self, and their everyday interpersonal interactions and relationships" (Fan, 2012, p. 176). Drawings can be used to learn more about children's interaction with family members and their attitudes toward them (Fan, 2012). For the general

Deaf population, a psychotherapy approach that incorporates a visual component, such as art therapy, would be greatly beneficial:

Because art therapy can be a nonverbal intervention, it is a particularly valuable approach when working with Deaf/hearing-impaired population...art therapy has the unique power of reaching even the most regressed clients who have been unsuccessful in resolving their inner conflicts through traditional psychotherapeutic intervention. Children who have difficulty bridging the gap between their hearing parents and themselves often need an alternative mode of expression. (Horovitz, 2007, pp. 45-46)

Through art therapy, a deaf child has an opportunity to engage in expression regardless of language. Artistic expression may be the only communicative channel for the child; after all, one does not have to “speak” while engaging in art. Art therapy opens the door for the child to express feelings, thoughts, emotions, perspectives, memories, and stories freely in any form.

To further explore the possible communication struggles within families with a deaf child, this research study proposed utilizing an art therapy assessment, the Burns and Kaufman (1970) Kinetic Family Drawing (KFD). The KFD elicits expressions that can be analyzed using Gantt and Tabone's (1998) Formal Elements Art Therapy Scale (FEATS). The FEATS measures the structural components of the KFD, rather than the content, through global variables to assess differences between the two groups, deaf students with non-signing parents and deaf students with signing parents.

The results of this study may contribute to information and data that has application to improving psychosocial areas of development for children who are deaf, and encourage families to maximize communication access by introducing sign language at birth.

Definitions

D/deaf: A capitalized “D” refers to individuals who identify with Deaf culture and use ASL as their mode of communication as their cultural identity, while a lowercase “d” refers to those considering hearing loss as a medical diagnosis and do not define themselves as members of Deaf communities and do not use ASL to communicate (Szarkowski, 2007).

Signing: Someone who uses ASL as the primary mode of communication *or* someone who has full communication access to a signed language (i.e. British Sign Language).

Non-signing: This identifies those who do not use ASL or another signed language such as fingerspelling, writing, using speech, and gesturing.

Psychosocial development: Erik Erikson’s theory of eight stages of human development, each characterized by a challenging developmental crisis. The development of ego identity (conscious sense of self developed through social interaction) is constantly changing based on personal life experiences (Berger, 2010).

Kinetic Family Drawing (KFD): An art therapy assessment designed to understand family dynamics, child development, self-concept, defensive functioning, and interpersonal relationships in addition to its ability to show measurement of actions, style of drawings, the size of figures and the distance between figures (Brooke, 2004).

Formal Elements Art Therapy Scale (FEATS): An art therapy rating system created to provide a method for understanding and examining non-symbolic aspects of art, to measure changes in clinical states, changes in children’s drawings, differences between two or more groups, and to place the focus on how people draw rather than the content of their drawings (Brooke, 2004). Human raters use the FEATS to rate the drawings using a 6-point Likert scale with values ranging from 0 to 5.

Chapter 2: Literature Review

Deafness

Sound travels through the air in the form of waves of varying frequencies. These waves are channeled into the external ear canal, and then transmitted to the middle ear. For a person who hears, the middle ear serves as an amplifying system to compensate for the loss of the intensity of sound as it travels from the middle ear to the inner ear or cochlea. The waves inside the cochlea stimulate the auditory nerve, which transmits the sound stimuli to the auditory center in the brain (Schwartz, 1996).

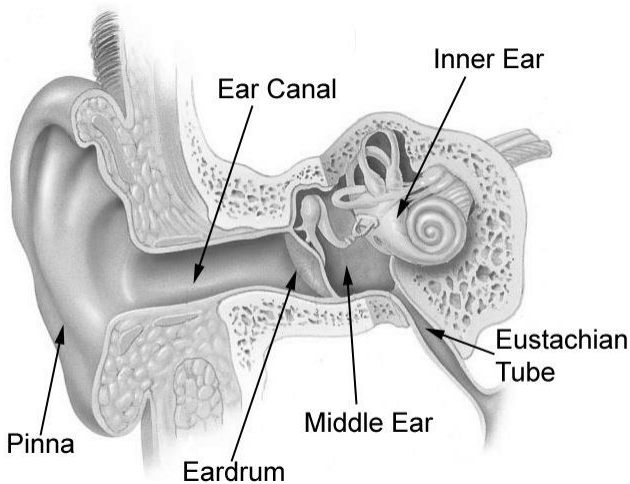


Figure 1. Anatomy of the Ear (MDhealth, 2013).

Hearing loss, or deafness, is classified into three different groups: 1) location of the disease within the ear; 2) the onset of the hearing loss in relation to speech and language development; and 3) the cause of the disease within the ear (Schwartz, 1996). Within these groups, there are two subgroups: genetic and non-genetic. Genetic hearing loss is caused by the presence of an abnormal gene within one of the 46 chromosomes (Schwartz, 1996). This abnormal gene may be passed on by either or both parents, or may occur as a result of a mutation during fetal development. The majority of children with genetic-type hearing losses are otherwise healthy. Non-genetic hearing loss is caused by an event such as maternal drug use,

infection of mother during pregnancy, jaundice, meningitis, and other events, which results in incomplete or abnormal development of the ear structures prior to birth. With non-genetic hearing loss, there is no chance of transmitting the hearing loss to future generations (Schwartz, 1996).

Communication for People who are Deaf

Parents often feel pressured to make immediate decisions about the child's future after discovering the child's deafness (Borum, 2012). "When deaf infants are raised by hearing parents, this need for early intervention is especially conspicuous in the communicational context" (Ingber & Dromi, 2009). However, the parents frequently are not educated on all communication methods before they choose one. Additionally, the parents' culture and level of education influences their choice about mode of communication. Deaf parents are more likely to be culturally aware of the importance of sign language, which is a crucial aspect for the child born deaf.

In "Lack of a Common Language: Deaf Adolescents and Hearing Parents," Susan Kolod (1994) discussed the importance of communication between parent and child. The quality of verbal language often evoked responsiveness from caregivers that facilitated psychological growth (Kolod, 1994). With shared language, the process of validation between the parent and child begins to develop. "Through language, verbal or nonverbal, two people come to agree about, and share a common reality. Each is understood by the other" (Kolod, 1994, p. 635). The child's self-esteem increases when he or she perceives acceptance from those around the child, especially in the family atmosphere into which he or she is born (Desselle, 1994). Moreover, Kolod stated there was an assumption that language was developed only through an auditory channel. Based on that assumption, a person who was deaf would not develop language and

communication, and would lack the mechanism for normal ego development. This assumption led to the perception of deafness as a pathological condition (Kolod, 1994). Yet, Kolod (1994) believed strongly that the common communication struggle for deaf people was due to deprivation of verbal language, deprivation of nurturing, or a combination of both. Individuals who were deaf and have no communication struggle have first language commonality with their parents. To prove this hypothesis, Kolod (1994) interviewed 15 Deaf adolescents whose parents were also Deaf, and 15 Deaf adolescents whose parents were hearing. The results from the interviews presented a significant difference in the parents' first response and interaction with the child who was deaf. Since the child's physical development would continue at a normal pace, the communication, interpersonal, and psychosocial developments of the child who is deaf depends on how and when the parents handle the discovery (Kolod, 1994). The parents who were hearing reported feelings associated with trauma such as shock, denial, guilt, mourning, and depression. Humphries et al. (2012) discussed the collective trauma the parents experienced with the discovery that their child was deaf:

These parents are in a state of vulnerability, grieving the loss of a normally hearing child and fearing what the future may hold (or not hold) if their child cannot speak like a hearing child. They may view sign as an inferior choice or a last resort and not fully understand that sign language is a human language with the linguistic complexity and expressiveness of spoken language. (p. 3)

Sara Ingber and Esther Dromi (2009) expanded the body of research regarding this collective trauma, providing information about some necessary steps families go through after the first discovery:

[Discovery] of a child with [deafness] first elicits a loss and mourning process and then

compels the family members to [reorganize], adjust their resources and lifestyle, and accept the new irreversible reality (Beckman et al., 1993; Crnic et al., 1983; Sass-Lehrer and Bodner-Jhonson, 2003). The family requires background information about the [deafness] and its implications, guidance in identifying and using new and familiar coping strategies, support in changing its attitudes and assistance in discovering resources for effective, normative functioning (Dromi and Ringwald-Frimerman, 1999; Brown and Remine, 2008; Jackson and Turnbull, 2004; Porter and Edirippulige, 2007). (p. 84)

In contrast, parents who were Deaf might have already anticipated that their child would be deaf. Consequently, they were prepared to construct a shared “Deaf reality” with their child: “This sense of sameness is similar to the sense of sameness and security found within any ethnic community or group membership” (Kolod, 1994, p. 638). Kolod’s (1994) interviews discussed different memories between two adolescent groups, one group with hearing parents and the other with Deaf parents. The adolescents with hearing parents indicated experiences of disconnectedness and distance, which: “sets the stage for difficulties both in areas of cognitive and emotional development of the deaf child” (Kolod, 1994, p. 642). The traumatized and confused parents’ inability to emotionally connect contributed to the deaf child’s perception of him/herself as defective. She added, “the Deaf teenagers with hearing parents seem to have internalized a damaged sense of themselves” (p. 644).

Kolod (1994) also discussed the identity shift of a deaf adolescent with hearing parents. Often, the adolescent made the decisive movement from using speech as a means of communication and shifted to utilizing sign language. The deaf adolescent began to identify him/herself as a “Deaf person” and wanted to associate only with people who were Deaf. This shift in self-definition from “disabled” to “culturally different” was unique in the sense that

normally parents and teenagers share a common language through which they can attempt to discuss differing ideas. In the cases of these Deaf adolescents, they shut their hearing parents out of the “Deaf world” because they had not learned sign language (Kolod, 1994). Kolod concluded that this pointed to the importance of early access to common modes of communication for normal development. Another researcher, Desselle (1994), concluded that if the whole family participates in communication with the child regardless of their hearing status, the child would feel like an accepted member of the family.

Sinkkonen (1996) discussed a similar concern regarding communication for people who are deaf. In her article, “Healing Ego Defects: Onset of Communication in a Deaf Boy,” she discussed origins of communication and a case illustration of a deaf boy with whom she worked. She leaned heavily on the concept that language development is linked with cognitive development, but that language was more influential on the effective engagement between the baby and his/her caregiver. In the article, Sinkkonen references Call’s (1980) work on the importance of language for ego development: “Language is an important but by no means the only manifestation of symbolic functioning. It is, however, essential for ego development. Language is crucial for the initiation and maintenance of object relations” (as cited in Sinkkonen, 1996, p. 103). Since more than 90% of children who are deaf are born to parents who are hearing, Sinkkonen commented on the uniqueness of the situation where a biological child belonged to a different linguistic group than the parents. Because of this situation, the deaf child was “diagnosed” at a late age, causing the development of a fragile ego. If the child had early access to sign language, he or she had equal opportunities to develop a healthy personality as a hearing child (Sinkkonen, 1996).

Sinkkonen (1996) provided a case illustration of Sami, a deaf boy who resided in a small

town in Finland. Sami had a medical condition in both ears that “deafened” him after birth. The parents continued to hope for several years that he would hear once the condition healed; however, a hearing test showed that Sami was indeed profoundly deaf. He had developed no language from birth until he was almost four years old, when his mother learned about sign language. Until that time, Sami had spent his life screaming and fighting against his mother because he did not understand what was going on. Sinkkonen visited Sami twice: when Sami was 6 years old and again when he was 10 years old. During the second visit, Sinkkonen saw tremendous progress in Sami’s behavior and greater connectedness with his environment (Sinkkonen, 1996).

Early access to sign language is crucial for normal ego development. Learning sign language creates a potential space where the deaf child can develop a sense of relatedness (Sinkkonen, 1996). Direct access to language provides a sense of belonging and a sense of interaction. The use of language allows people to communicate with others about how they feel, what they desire, and how they understand the world. Without common language, “negative experiences of linguistic/communicative exclusion from family... often bring feelings of inferiority and interact with people who may be warm but with whom they may not be able to form intense and complex relationships because of communication access issues” (Miller, 2010, p. 483).

Development of Language

Human language is unique due to its reliance on social convention and learning. Human beings have an innate sense of language from birth; however, humans require postnatal experience to produce and decode speech sounds (Purves, Augustine, Fitzpatrick, et al., 2001), and acquire language through social interaction in early childhood. Most babies begin producing

speech-like sounds at approximately seven months, but congenitally deaf infants show deficits in early vocalizations and fail to develop language if not provided with an alternative form of symbolic expression, such as ASL (Purves et al., 2001). However, if these children are exposed to ASL from birth, they begin to “babble” with their hands just as a hearing infant babbles audibly, suggesting that early experiences shape language behavior (Purves et al., 2001).

Because of that innate sense of language, children who are deaf and have not been taught sign language might be observed using a spontaneous and idiosyncratic system of signs and gestures among themselves (Neisser, 1983) as an indicator of the instinctive need of language for communication. In *The Other Side of Silence: Sign Language and the Deaf Community in America* (1983), Neisser discussed a study conducted by two University of Pennsylvania graduate students on home signs, which are gestural communication systems developed by deaf children who lack formal structure from a language model. The children in the study attended five different oral schools and did not know each other. They were not taught sign language since their schools forbade the use of sign language (Neisser, 1983); however, the children were observed using spontaneous signs and gestures to make their wishes and thoughts known. All of the children used a structured way of ordering the signs grammatically, indicating that they had syntax (Neisser, 1983). Using home signs as an indicator of the innate sense for language showed that people who were deaf were capable of normal development with full access to language.

In spite of humans' natural desire for language, Deaf people have struggled for hundreds of years for communication access. Padden and Humphries (2005) pointed out in *Inside Deaf Culture* how schools for the deaf continued to “rescue” children, mainly adolescents who struggled to thrive in public schools. Even if the child who was deaf had mastered speech, he/she

might still be isolated. Because of that, “it is not uncommon to find ten- or eleven-year-old deaf children who arrive at schools for the deaf barely literate, knowing not even how to spell or write their last names” (Padden & Humphries, 2005, p. 15). Additionally, ASL is often the deaf child’s first language; the majority of American Deaf people learn English as a second language. The vocabulary and syntax of ASL differs radically from English, and children who are Deaf may experience difficulties learning English.

Charrow and Fletcher (1974) conducted a study utilizing the Test of English as a Foreign Language (TOEFL) to:

Investigate the possibility that deaf children learn English as a second language by comparing the performance on a test of English as a second language by two groups of deaf subjects: deaf children of deaf parents and deaf children of hearing parents. (p.463)

Charrow and Fletcher formed three general hypotheses. Their hypotheses were: 1) children with Deaf parents should outperform the children with hearing parents on any measure of language skills; 2) the performance of children with Deaf parents on a test of English as a second language should resemble performance by foreign students more than it resembled the performance of the children with hearing parents; and 3) performance by deaf children with deaf parents on a test of English as a second language and a standard test should not resemble to the performance of deaf children with hearing parents (Charrow & Fletcher, 1974). Twenty-six students in a state school for the deaf participated in the study. The results showed that the TOEFL results for deaf students with Deaf parents demonstrated similarities with the foreign students group for whom English was their second language. Charrow and Fletcher inferred that “the superior performance by the deaf subjects with deaf parents on the TOEFL and on the SAT may be related to early competence in sign language” (Charrow & Fletcher, 1974, p. 469).

The Charrow and Fletcher (1974) study provides evidence indicating exposure to sign language from birth helps a child develop as much competence in all developmental areas as any hearing child. Additionally, learning sign language and English from birth make it possible for the child to be competent in both languages. The majority of the deaf children learn sign language and English at a later age, causing difficulty in competence and understanding of both languages. If the deaf child is more skilled in the first language, the skills in the second language will show greater gains compared to those who possess fewer skills in the first language and therefore an inability to transfer across languages (Goodrich, Lonigan, & Farver, 2013).

Art Therapy for the Deaf

With this difficulty transitioning between two languages, the deaf person faces a cross-cultural and bilingual phenomenon (Horovitz, 2007). Horovitz (2007) discussed the factor of English being a second language in *Visually Speaking: Art Therapy and the Deaf*: “Bilingual sign language implies acquiring competency in the mother tongue’s sign language and then employing that as a basis for acquiring oral language as a skill as a ‘second language’” (p. 150). Horovitz (2007) wrote that art therapy techniques might lead to unlocking cognitive delays encountered by some deaf people, particularly because “It can be used effectively with Deaf clients in certain situations where communication may be an issue” (Horovitz, 2007, p. 21). Art therapy could serve as a creative outlet for self-expression and communication as well as a safe and accessible way for Deaf clients to explore and provide meaning to their innermost thoughts and feelings (Horovitz, 2007). Because of that newfound understanding, the field of art therapy is changing to meet the needs of Deaf clients:

A quiet revolution is taking place and changing these concepts. This revolution seems to be spreading. Some of the insights behind this new thinking has [sic] come through the

field of creative arts therapy. The creative arts therapists recognize that deaf children can image as well as anyone and perhaps better. (Horovitz, 2007, p. xix)

The utilization of the Kinetic Family Drawing (KFD) in this study will expand this revolution and maneuver past the standard studies of deaf children, by eliciting information about cognitive and psychosocial development of the Deaf participants through their drawings.

Kinetic Family Drawing (KFD)

The Kinetic Family Drawing (KFD) is an art therapy assessment designed to understand child development, focusing on areas of interpersonal relationships (Burns & Kaufman, 1970). The developers, Robert Burns and S. Harvard Kaufman (1970), added the *kinetic* aspect to family drawings to reflect emotional relationships. The administration of the KFD includes a standard-sized 8½ x 11-inch white paper and a pencil with the following instructions: "Draw a picture of everyone in your family, including you, *doing* something. Try to draw whole people, not cartoons or stick people. Remember, make everyone *doing* something – some kind of action" (Burns & Kaufman, 1970, p. 19-20). Burns and Kaufman (1970) asserted that the KFD reflected emotional disturbances faster than interviews or other techniques (Brooke, 2004). Therapists and researchers trained in this assessment can use the KFD to learn more about children's interaction with family members and their attitudes about their family. This study proposes to utilize the KFD to investigate children with different family communication structures to explore the child's self-concept and understanding of the family. By utilizing the KFD, assessing organicity, regression, and interpersonal indicators may be possible. Other areas of exploration may include the child's cognitive development, psychosocial maturity, family dynamics, and possible defenses. Furthermore, this study aims to investigate the child's identification within the family.

Identification is part of growth and development, and is usually an automatic or

unconscious process. Parents or caregivers are the earliest objects of this process of identification, as are siblings and others who are part of a child's environment (Burns & Kaufman, 1970). Culture also shapes individual development: "Emotions are probably similar for all humans, however, the expression of emotions is indeed culturally mediated" (Wegmann & Lusebrink, 2000, p. 179). Wegmann and Lusebrink (2000) became engaged in cross-cultural studies and felt the KFD was a promising test for cultural studies, including Deaf culture. For people who identified with Deaf culture, the KFD became a useful tool to investigate the individual acculturation process. Through KFD drawings, this researcher can gather information about family dynamics, cognitive and emotional development, and a sense of self from the children who are deaf.

Various factors, including communication, affect family dynamics and development and increase stress for young children. In an article by Kim and Suh (2013), the preschool participants in their study experienced social changes through caretaking at daycares, and instability in parents' employment, income and marital status. Researchers used the KFD to understand the extent of the unexpressed internalized problems and discovered that the static variables in the KFD reflected the child's feelings about his/her family members. Drawings without parents suggested that children were not able to form stable interpersonal relationships due to the difficulty experienced in parental relationships (Kim & Suh, 2013). A description of interaction between members represented the child's perception of family dynamics. Signs of withdrawal included remote arrangement, barriers, inactivity of the father figure, and exclusion of interaction (Kim & Suh, 2013). These signs of withdrawal may be similar for children who are deaf and experience communication barriers, inactivity of the parental figure who does not attempt to communicate directly with the child, and absence of interaction between the child and

the rest of the family members.

When Burns and Kaufman (1970) developed the KFD, they did not present any scoring/rating system that one could utilize with the KFD. Two years later they presented a scoring system, but there were issues of reliability, validity, and cultural influences with this scoring system due to inadequate “critical research evaluation and little published literature available to [clinicians] to convince them that the KFD is a useful addition to the diagnostic battery” (Handler & Habenicht, 1994, p. 441). The KFD remained primarily a clinical instrument with inadequate norms and questionable validity. Some KFD researchers modified the Burns and Kaufman (1972) scoring system in different ways, such as adding new scoring variables or modifying the manner in which the original variables were scored (Handler & Habenicht, 1994). Handler and Habenicht (1994) conducted an exhaustive review of studies that emphasized single KFD signs and the use of single interpretation for each. They emphasized the need for more sophisticated studies that integrated approaches to interpretation. Reliability was a factor in test-retest studies. It appeared that the KFD reflected the change and variability in children’s performance on a day-to-day basis (Handler & Habenicht, 1994), especially in younger children. Another problem with interpreting the KFD was “whether the KFD represents the realistic family structure or the child’s wishes about the way they would like their family to be” (Handler & Habenicht, 1994, p. 458). Mostkoff and Lazarus (1983) concluded, based on the results of their study, that the KFD reflected the child’s feelings, perceptions, and general affect for the given moment. Because of low test-retest reliability, the KFD manual was criticized for its lack of precision in defining the variables for scoring the drawings. The administrator could draw subjective interpretations and project his/her own interpretations on the KFD drawings (Mostkoff & Lazarus, 1983). The Mostkoff and Lazarus (1983) study was conducted for the sole purpose of

observing whether developing an objective scoring system would produce good results in terms of interrater test-retest reliability. At the end of the study, they were able to demonstrate that it was possible to develop an objective scoring system with high interrater reliability.

Utilizing the KFD interpretive manual created by Burns and Kaufman (1972), one could analyze the drawings of characteristics, actions, styles, and symbols. The manual provided lengthy examples of each category. However, Burns & Kaufman (1972) warned, "in any attempt at hypothesizing the unconscious expression of any single symbol of a dream or a projective instrument such as a drawing, one must weigh the alternate and sometimes incompatible interpretations... to consider the totality of the individual" (p. 144). To reduce the potential for subjective interpretations, this study will use an objective scoring system, the Formal Elements Art Therapy Scale (FEATS), to measure the graphic indicators of global variables in the KFDs. Additionally the use of FEATS will also avoid another limitation identified with the KFD, evaluator bias, which occurred when the evaluator and the therapist were the same. With evaluator bias, there was a possibility that evaluator projections could lead to idiosyncratic interpretations (Gantt, 2004). To lower the possibility of subjective interpretations, the application of the FEATS to the study may increase rater reliability and validity in assessing the participants' drawings.

Formal Elements Art Therapy Scale (FEATS)

The Formal Elements Art Therapy Scale (FEATS) developers, Gantt and Tabone (1998) created a manual with a focus on evaluating drawings based on *how* people drew rather than *what* they drew. Raters were trained to approach each picture as if they did not know what it was supposed to be, utilizing a 5-point Likert scale. The FEATS measure changes in clinical states, changes in children's drawings as they mature, and differences between two or more groups.

Although the FEATS scale was originally developed for use with another art therapy-based assessment, Gantt's (1990) Person Picking an Apple from a Tree (PPAT), Gantt (2009) believed "researchers can also apply many of the 14 scales of the FEATS to other types of drawings" (p. 124). How each scale could be applied to drawings other than the PPAT is shown in Table 1.

Table 1.

Characteristics Assessed by the FEATS Scale

Scale	Assesses
Prominence of color	Use of color
Color fit	Realistic object
Implied energy	Degree of effort
Space	All types of 2-D art
Integration	Composition that consists of two or more objects and/or people
Logic	Composition
Realism	Directive requires a specific object or when artist describe the object
Problem solving	Remains unique to PPAT: degree of how artist solves problem of picking apple from tree
Developmental level	Interpretation of Lowenfeld's developmental levels
Details of objects and environment	Directive must require identifiable objects
Line quality	Use of drawing media: colored pencils, markers, or other fine-tipped media
Person	Directive must ask for or implies a whole person
Rotation	Measurement of items that deviate from expected position
Perseveration	Repeated motor act such as making a short line over and over without seeming aware of doing so

Note: Adapted from "The Formal Elements Art Therapy Scale: A Measurement System for Global Variables in Art," by L. Gantt, 2009, *Journal of the American Art Therapy Association*, 26(3), p. 124-129.

For the purpose of this study, a modification of the KFD will be necessary to best fit all of the FEATS scales. The original KFD administration included a pencil and an 8 ½ x 11-inch sheet of white paper. The Expressive Therapies Continuum (ETC), developed by Kagin and Lusebrink (1978) and further elaborated by Lusebrink (1990, 1991, 2004) provided a theoretical and practical guide about what media to use by “[categorizing] two-dimensional and three-dimensional media on continua from fluid to resistive and discussed the influence of media choice on image formation and information processing” (Hinz, 2009, p. 30). For this study, colored pencils fell in the same category as pencils for similarities in precision, planning, and their usefulness in conveying complicated thought processes representative of cognitive experiences. The researcher provided a set of 12 colored pencils and an 8 ½ x 11-inch sheet of white paper. The use of colored pencils offered the closest similarity to the characteristics evaluated in the original assessment over other artistic media such as pastels or paint. With this minor modification, the KFD drawings were rated using all of the FEATS scales. For example, prominence of color and color fit were relevant with the participants’ color choices. Integration, logic, and realism reflected how the participants integrate the family members and the self within the drawings. Problem solving applied to how the participant determines where to place family members, how they are interacting, and organization of figures.

Furthermore, the FEATS has demonstrated to be an effective tool for measuring differences between two or more groups with high reliability and validity. Munley (2002) discussed a pilot study utilizing the FEATS to explore whether children with AD/HD responded differently to the PPAT compared to children without learning or behavioral disorders. Five raters, who did not know the hypotheses, evaluated the drawings. Munley (2002) discovered three FEATS elements showed distinguishable differences between the two groups: color

prominence, details of objects and environment, and line quality. The purpose of this study was to measure the possible differences, and Munley (2002) achieved that with the FEATS rating system. Another article written by Nan (2012) reported the results of a study proving the reliability of the FEATS as an art therapy assessment tool. Nan (2012) stated that Gantt and Tabone concluded that with appropriate training, evaluators who were not art therapists could adequately rate drawings. "Gantt and Tabone believed that because the FEATS focuses on how people draw rather than what they draw, the assessment has great potential for cross-cultural research" (Nan, 2012, p. 128).

The reviewed literature provided information on deafness, communication for people who are deaf, development of language, art therapy for the deaf, the Kinetic Family Drawing, and the Formal Elements Art Therapy Scale to assess the appropriateness of utilizing the KFD for this study with participants who are Deaf. The literature discussed key points of utilizing the FEATS by providing evidence that using an objective scoring system may help maintain reliability and validity. Additionally, the KFD and FEATS have cross-cultural validity and application in both Deaf and hearing cultures.

Chapter 3: Methodology

This study utilized a comparative research method to evaluate and differentiate graphic indicators by applying the FEATS rating system to the KFD drawings of two groups: students who are Deaf with signing parents and students who are Deaf with non-signing parents. (For ease of reference, this paper refers to these groups as “signing” and “non-signing.”) The null hypothesis was that there was no difference in the FEATS scores of the KFD drawings of the two groups. The study sought to determine whether a statistical difference between the two groups is significant by adopting the hypothesis that there would be higher FEATS scores for those participants with signing parents, which may indicate possible struggles in developmental areas of those with non-signing parents.

Location and Time

The study was conducted at a large Midwestern metropolitan area school for the Deaf. The participants completed the KFD in an empty classroom for complete privacy. The study was conducted over two weeks during the spring of 2014.

Participants

The study was designed for a minimum of 14 students from middle school (sixth to 8th grade) to high school (ninth to 12th grade) from this school for the Deaf; 14 students were recruited. The age range of the students was 12 to 19 years of age. The study was open to students meeting the defined target audience regardless of grade, gender, race, ethnicity, socio-economic status, and religion.

Recruitment

The students were selected after obtaining parental consent. The researcher mailed a letter of information and consent forms to all the parents of students in the defined age range (see

Appendix A). Students whose consent forms were returned were requested to participate in the study. Any parental consents forms mailed back after two weeks were not included due to time constraints. The researcher requested approval from the students' teachers to allow the student to complete the study during class hours.

Procedure and Materials

The researcher administered the assessment in an empty classroom that sought to be reasonably distraction-free. Upon arrival, the researcher introduced herself to the student, explained that he or she was participating in a research study, and reminded him or her that he/she could stop participation at any time (see Appendix B). Students were informed that participation or non-participation would not affect their school grades. The students received the following instructions in American Sign Language: "Draw a picture of everyone in your family, including you, *doing* something. Try to draw whole people, not cartoons or stick people. Remember, make everyone *doing* something—some kind of action" (Burns & Kaufman, 1970, p. 19-20) on an 8½ x 11-inch paper with a set of 12 colored pencils. The students proceeded at their preferred pace. After completing the drawing, the students answered questions from the researcher (see Appendix C). Finally, the students completed a one-page questionnaire (see Appendix D). After submitting the questionnaire, the participants had the opportunity to ask any questions they had about the study before being released. The allotted time the students were provided to complete the activities was 50 minutes. The time they took was between 20 to 45 minutes.

Possible Risks and Management of Risk

There was minimal risk to students participating in this study. The study was self-paced, allowing the students to complete the drawing to their satisfaction. They worked alone so there

was no competition involved.

There was potential that students might experience minimal anxiety in relation to engaging in an art process, which may be an unfamiliar activity to them. To manage this, the researcher provided specific content instructions and limited media choices, both of which diminished the potential for excessive or unnecessary anxiety. To ensure student safety in the event students experienced excessive anxiety, contingency procedures were in place, which included termination of participation if symptoms of excessive anxiety were observed by the researcher, and referral to the school counselor if necessary. In the unlikely event that students experienced extreme anxiety they could withdraw from the study and return to class.

Data Collection

The researcher met with each student individually to review the informed assent document. Students were informed of the purpose and procedures of the study, their rights as a research participant, and measures taken to protect their confidentiality. The students were asked if they would still like to participate in the study after the informed assent document was explained. Students agreeing to participate were asked to sign the assent form.

In order to maintain confidentiality, the researcher assigned each student a number, which was used to label all data gathered including the KFD, the student response sheet, and the completed questionnaires. The identifying numbers were placed on the back of the drawing and in the top right corner of the questionnaire and student response sheets. All data collected was kept in a secure space in the researcher's classroom. Three raters received the completed drawings. The raters were provided a copy of the FEATS manual, rating sheets for each FEATS category (see Appendix E), a lead pencil, an eraser, and a modified table to explain how to score the KFDs using the modified FEATS rating system (see Appendix F). A sample KFD drawn by

the researcher was provided as a training tool to ensure the raters fully understood how to rate the drawings.

Data Analysis

The data of the signing group and the non-signing group was analyzed and compared utilizing standard deviations and a t-test. Rater agreement was determined based on the average standard deviations among raters. A comparison of the signing and non-signing group was determined by a t-test. A t-test is a statistical hypothesis test that follows a t-distribution if the null hypothesis is supported. The t-test is commonly used when the variances of two normal distributions are unknown and when an experiment uses a small sample size. The p value is the probability used to determine if two sets of data are significantly different from each other (Mertens, 2010); in this case, it was used to determine whether the FEATS scores differed significantly between each group. By using the t-test, a comparison of the differences between the two groups was possible (Mertens, 2010).

Chapter 4: Results

This study used a t-test comparison designed to answer the questions: Will there be a difference in drawing indicators of those students with signing parents when compared to those students with non-signing parents? Could those differences indicate possible struggles in cognitive and psychosocial developments of those with non-signing parents? Results in this study indicated a significant difference between the two groups as rated by the Formal Elements Art Therapy Scale (FEATS). Three trained raters scored all KFDs. Average standard deviation scores were used to establish interrater reliability from the FEATS rater data.

Participants

The study sought a minimum of 14 students. The researcher received 16 consent forms. One student was absent on his scheduled time slot and due to time constraints this student could not be rescheduled. The second student declined participation. In total, there were 14 KFDs completed and obtained from the students. During the recruitment period, which lasted two weeks, the researcher scheduled students according to her time availability on campus. The study was open to all students above the sixth grade level. Students provided their gender, age, grade, race/ethnicity, and communication methods with parents and siblings on a demographic questionnaire during the data collection session. Student demographics are presented in Table 2.

Table 2.

Demographics of Student Participants

Demographic Category	Students
Gender	
Male	9
Female	5
Age/Grade Level	
12-14 / 6 th –8 th	5
15-19 / 9 th –11 th	9
Race/Ethnicity	
Caucasian	10
Marshall Islander	1
African American	1
Hispanic	2
Communication with Parents and Siblings	
Signing	7
Non-Signing	7

Agreement of Raters

Three raters rated the students' Kinetic Family Drawings (KFD) using the Formal Elements Art Therapy Scale (FEATS). The FEATS asks raters to measure 14 graphic variables using a Likert scale ranging from zero to five. For the purpose of this study, the researcher determined that a standard deviation of 0.00 to 0.47 per scale is excellent rater agreement as they are either in perfect agreement or have a single rater score differentiate by one point from the other two. For each KFD, an average standard deviation was derived from all of the 14 scales. Rater scores falling *below* a 0.59 standard deviation for a KFD indicated agreement. To reach a 0.59 average standard deviation score, the KFD must have approximately 9 out of 14 scales, which would be considered excellent rater agreement. The lower the average standard deviation is, the better the rater agreement is. In order to prove interrater reliability from the FEATS Rating

Sheets, Table 3 shows the average standard deviation among Rater 1, Rater 2, and Rater 3 for each KFD.

Table 3.

Collective Average Standard Deviation

Student	Average Standard Deviation
KFD 1	0.30
KFD 2	0.59
KFD 3	0.35
KFD 4	0.62
KFD 5	0.51
KFD 6	0.64
KFD 7	0.30
KFD 8	0.53
KFD 9	0.36
KFD 10	0.35
KFD 11	0.40
KFD 12	0.42
KFD 13	0.43
KFD 14	0.52

The research found that 12 out of 14 students' KFDs had an average standard deviation of 0.59 or less, which presented validation that the majority of the three raters showed agreement. Additionally, there are bar graphs to display each FEATS scores to illustrate rater agreements, which will be found in Appendix G. Next, the students' KFDs along with their averaged FEATS scores are presented on the following pages to display what the raters have scored for each drawing.

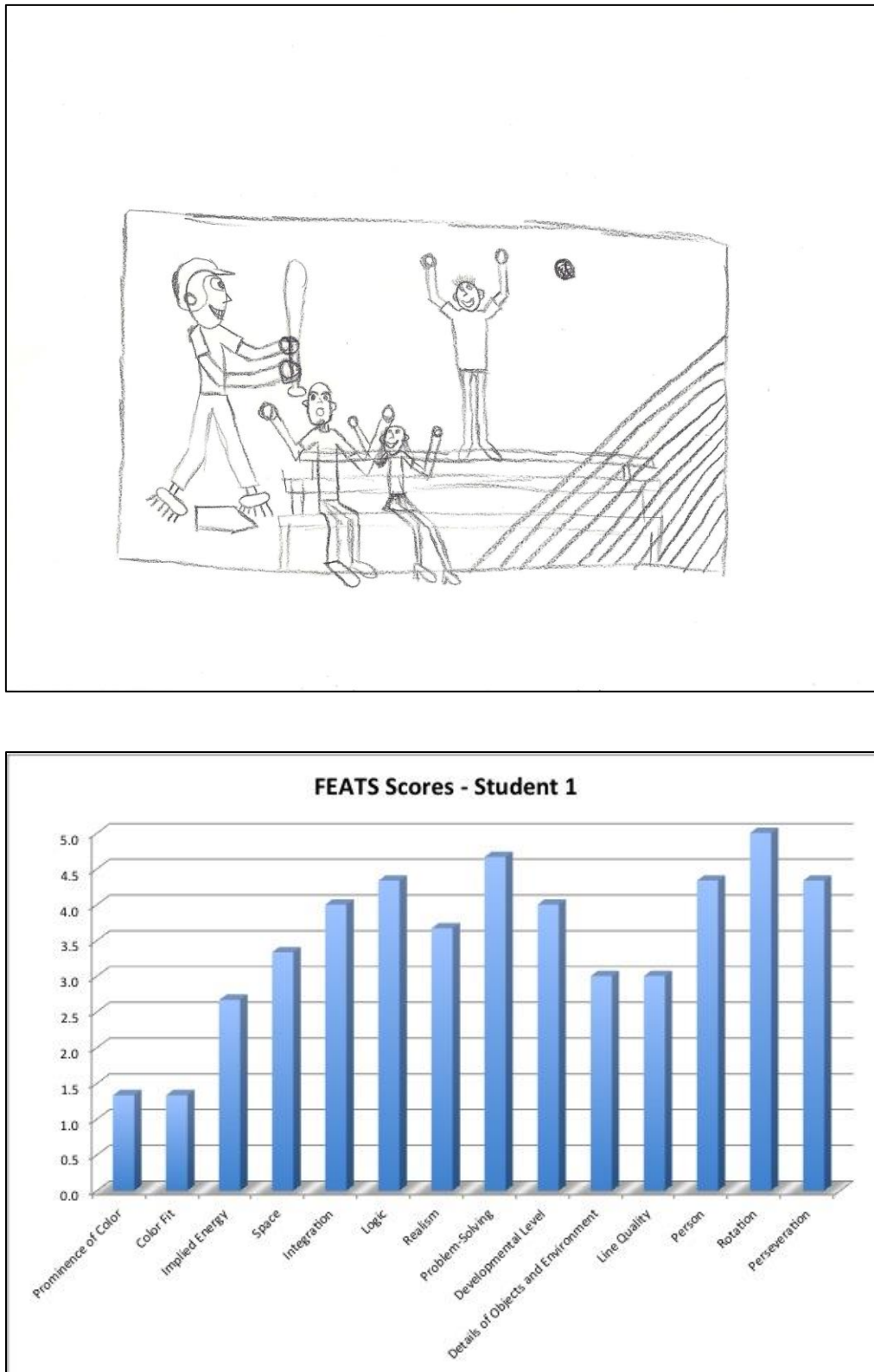


Figure 2. Kinetic Family Drawing and averaged FEATS scores, Student 1.

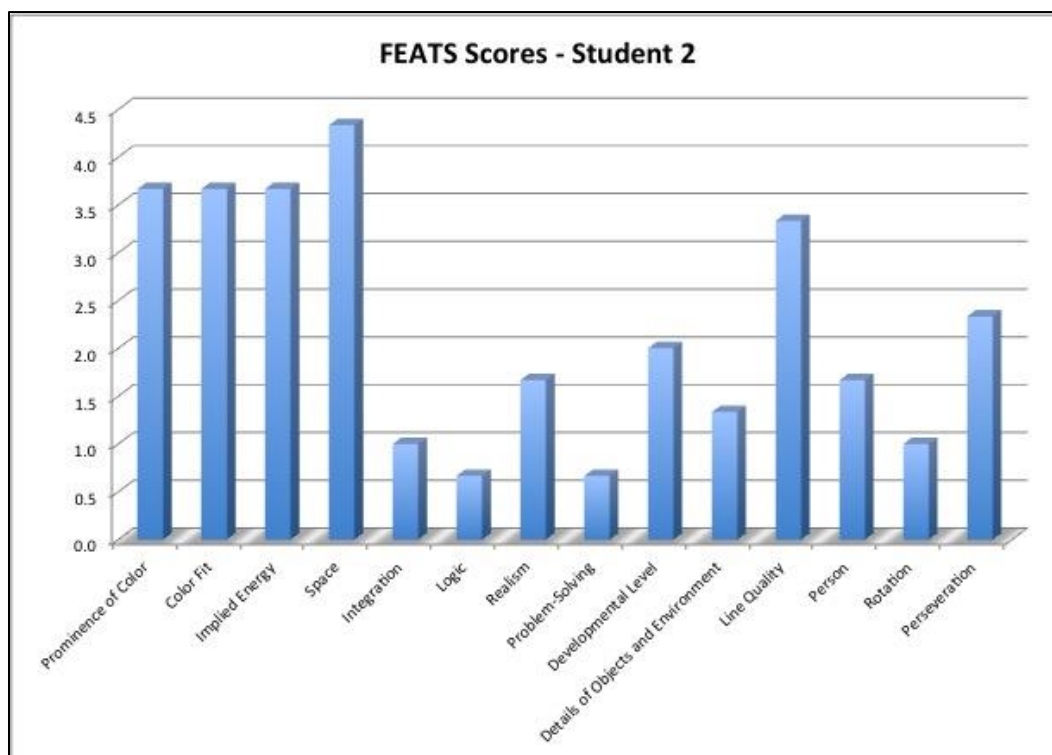


Figure 3. Kinetic Family Drawing and averaged FEATS scores, Student 2.

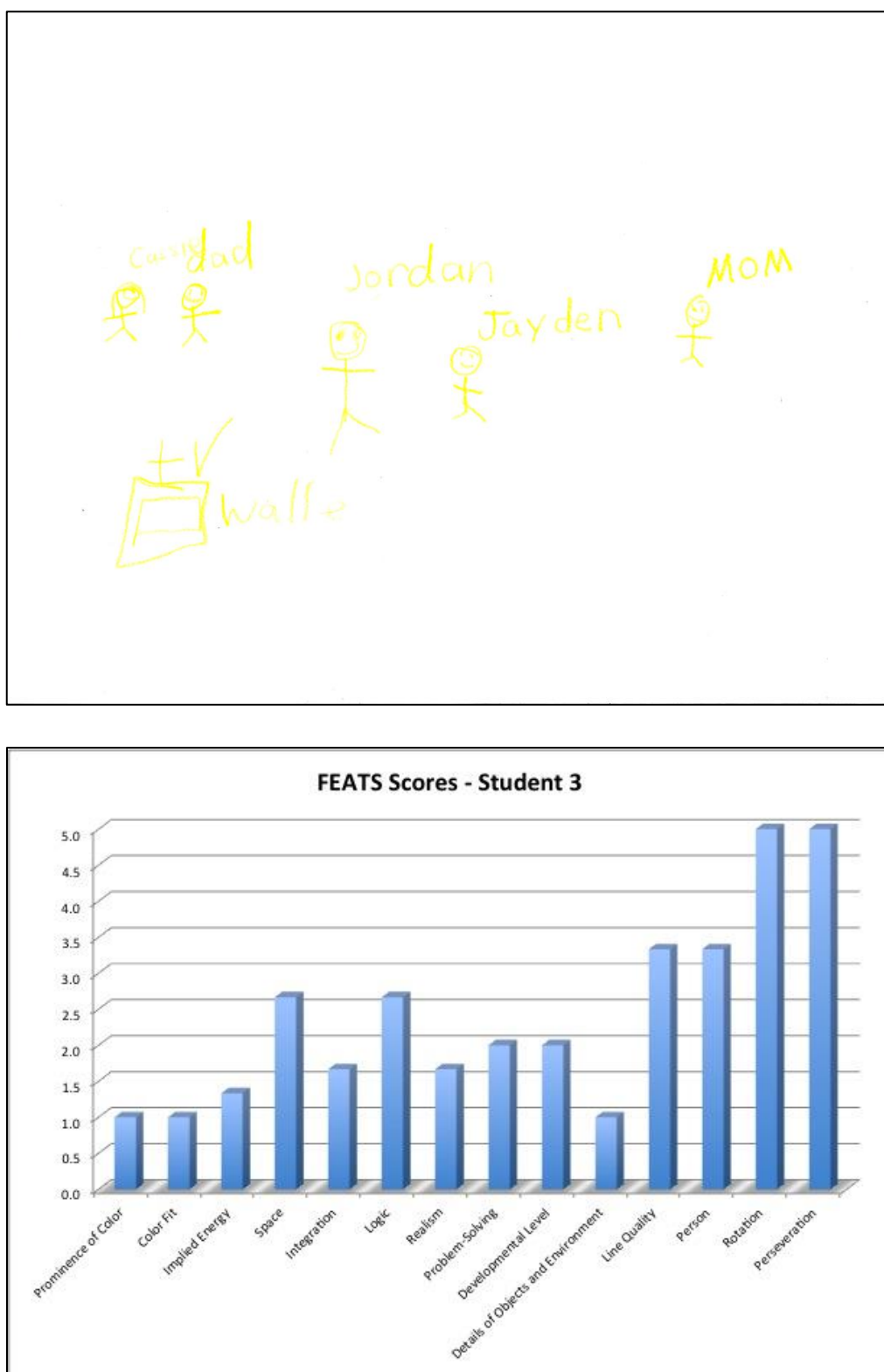


Figure 4. Kinetic Family Drawing and averaged FEATS scores, Student 3.

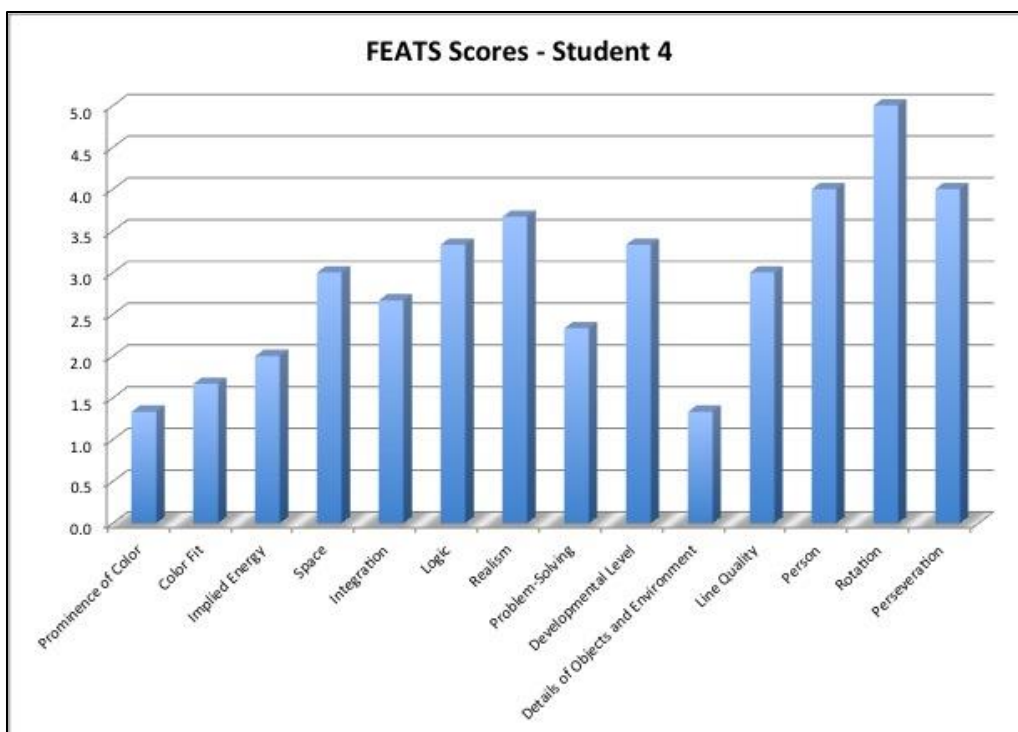
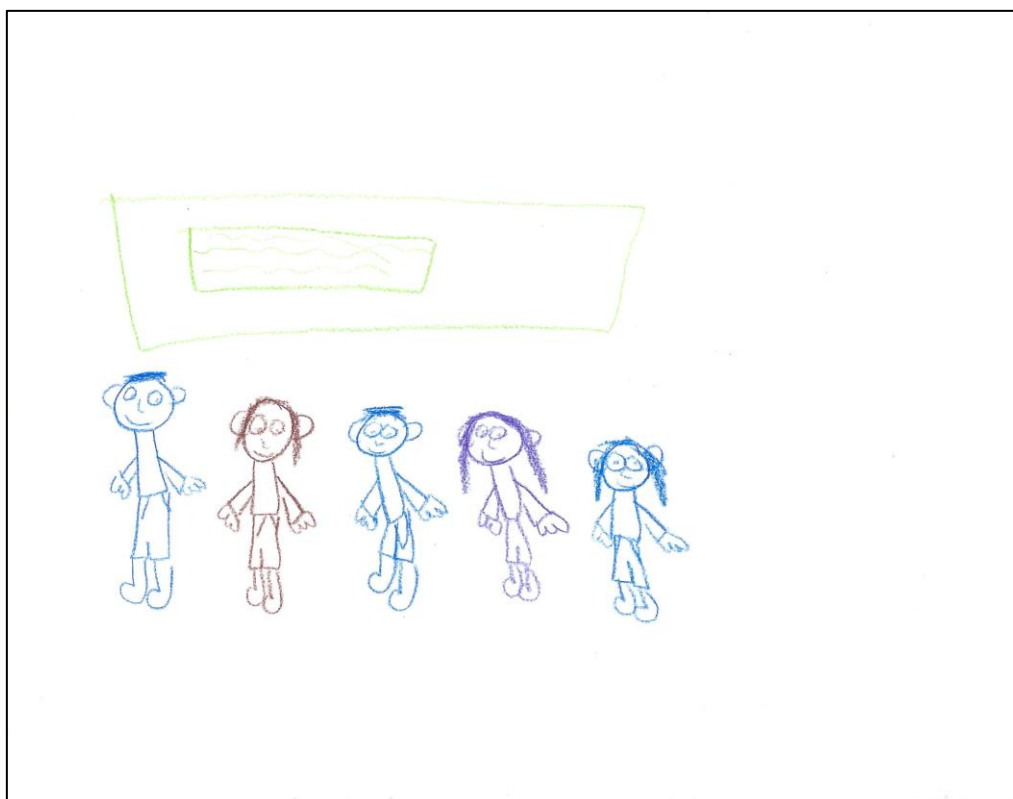


Figure 5. Kinetic Family Drawing and averaged FEATS scores, Student 4.

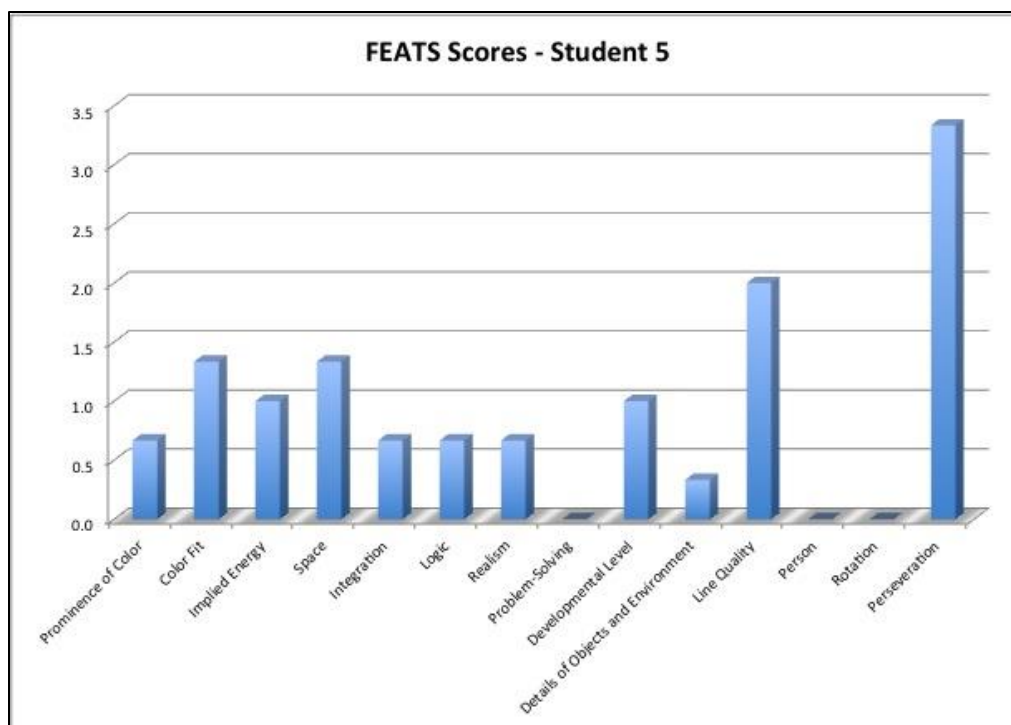
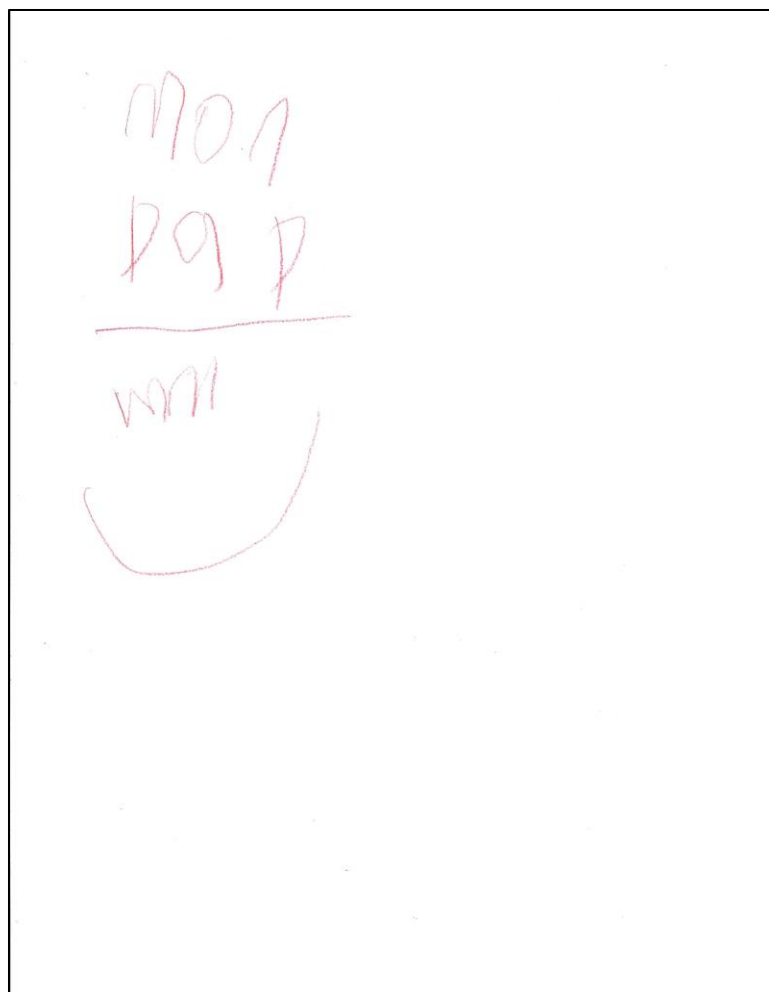


Figure 6. Kinetic Family Drawing and averaged FEATS scores, Student 5.

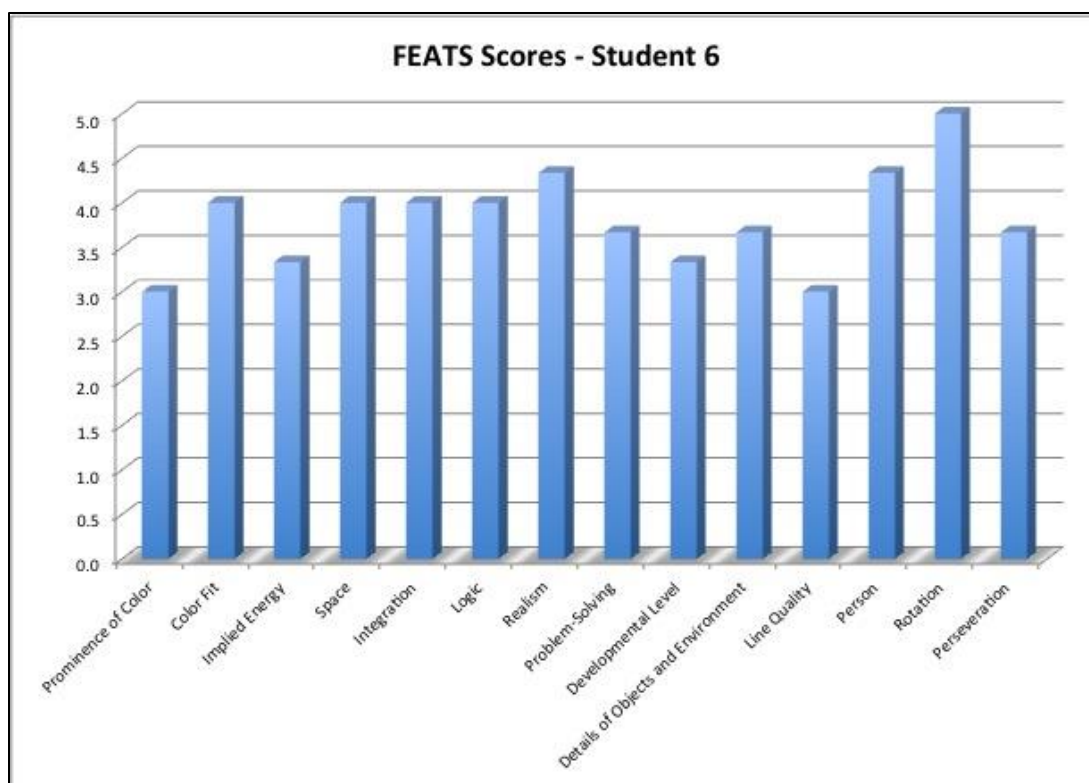
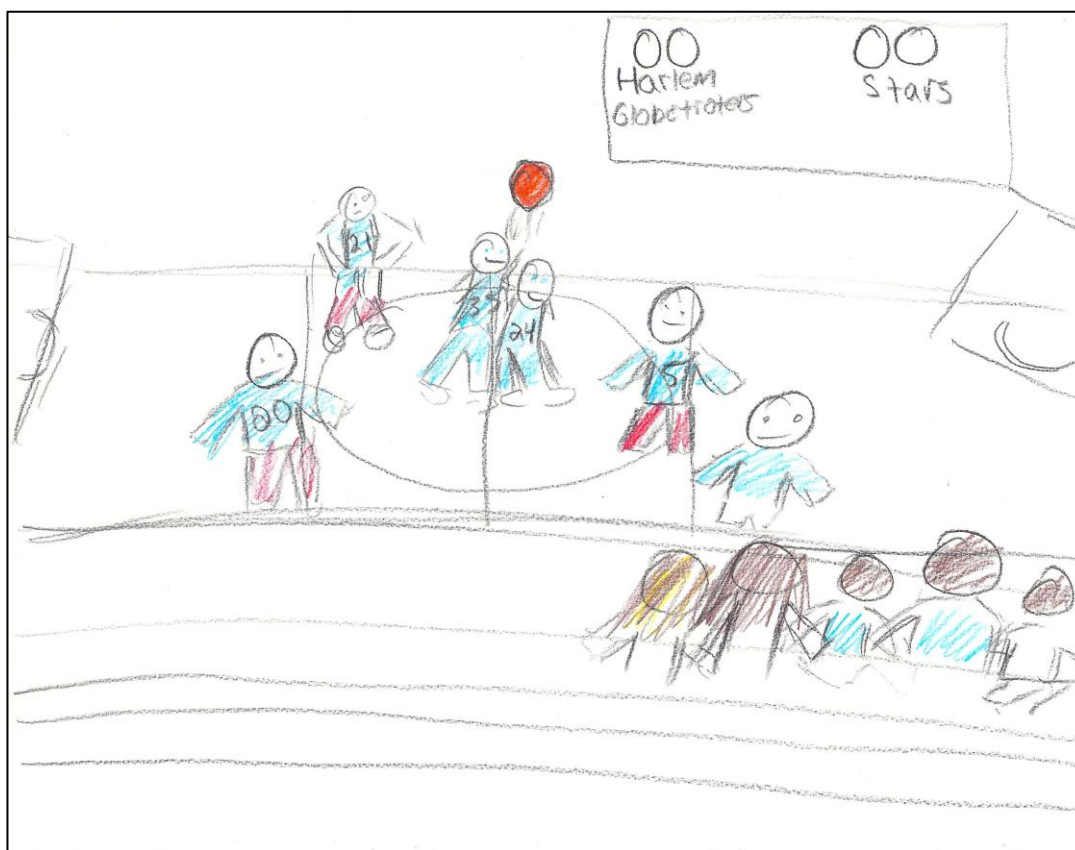


Figure 7. Kinetic Family Drawing and averaged FEATS scores, Student 6.

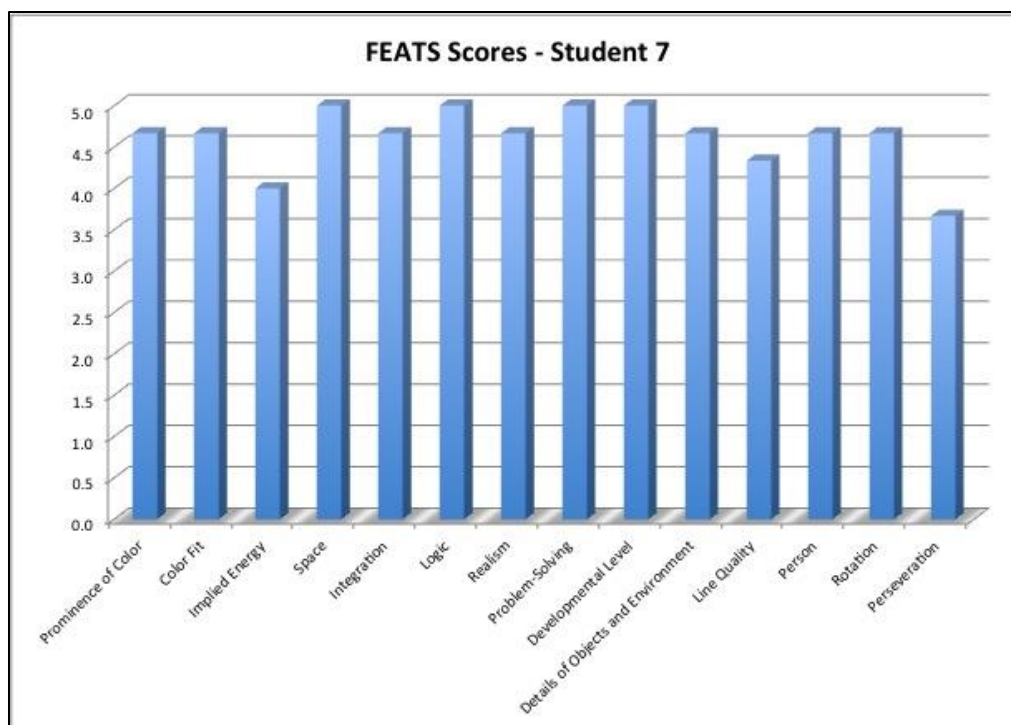
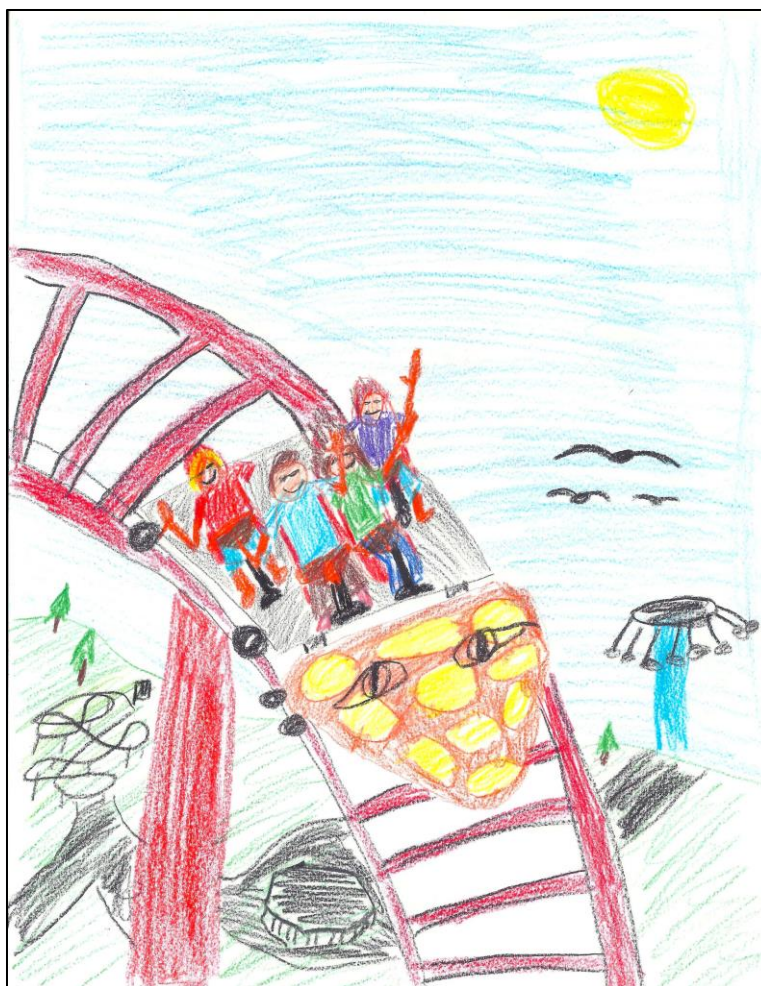


Figure 8. Kinetic Family Drawing and averaged FEATS scores, Student 7.

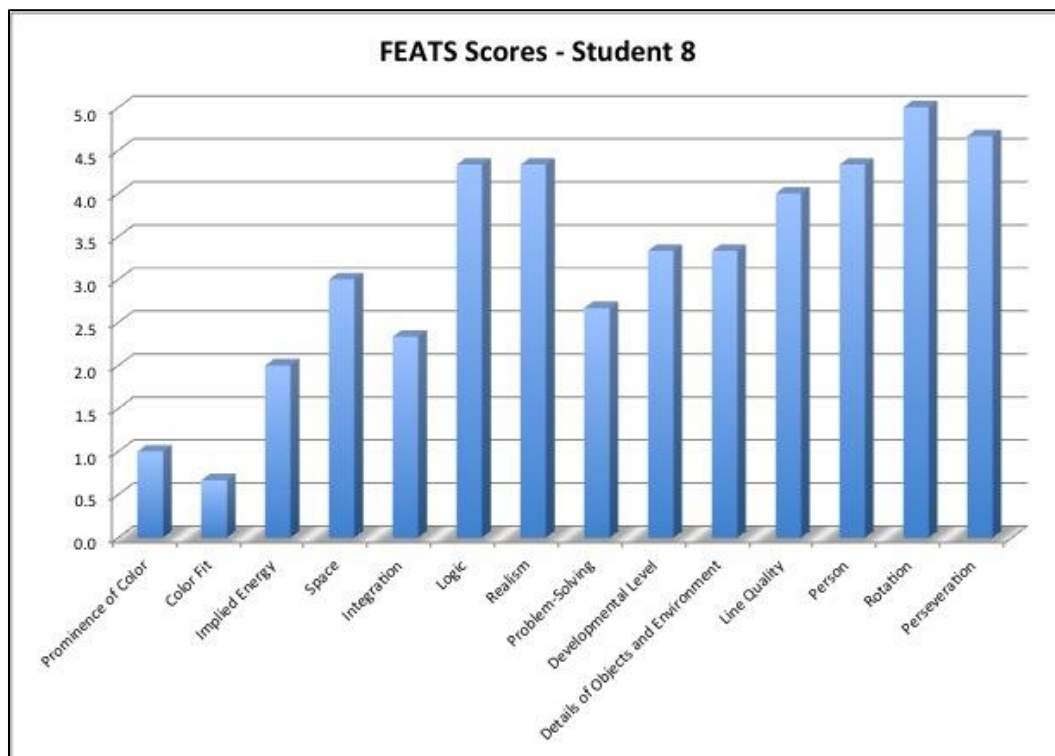
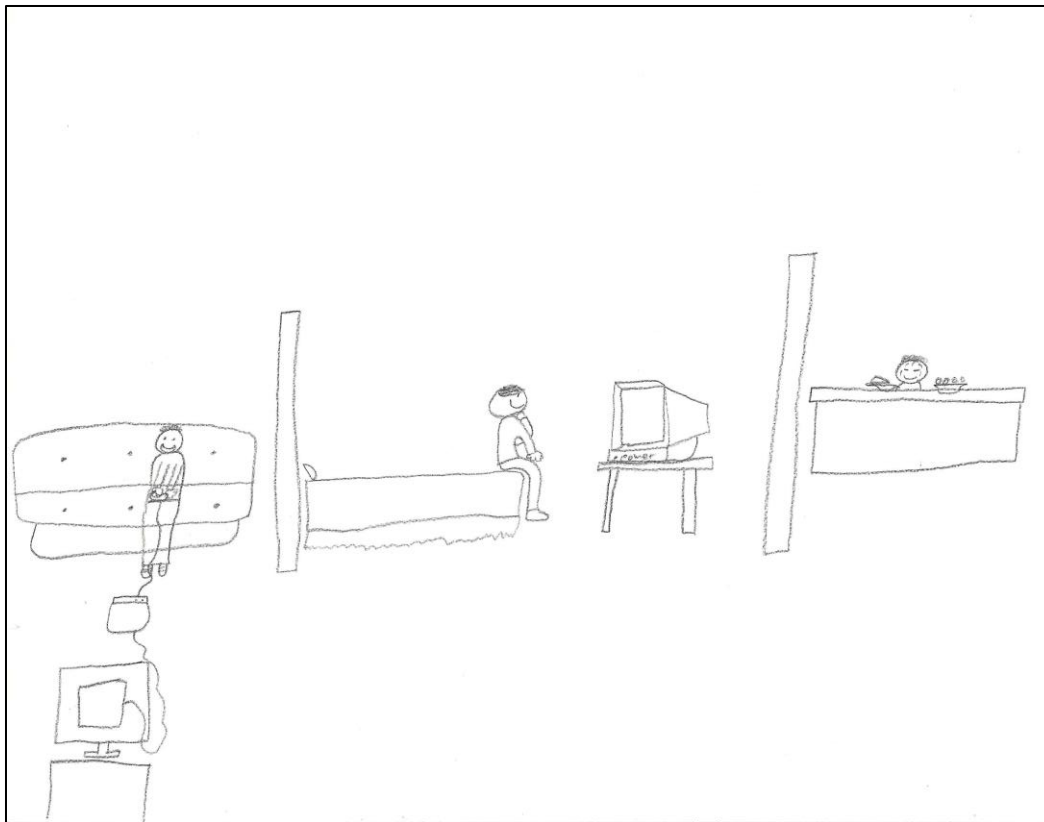


Figure 9. Kinetic Family Drawing and averaged FEATS scores, Student 8.

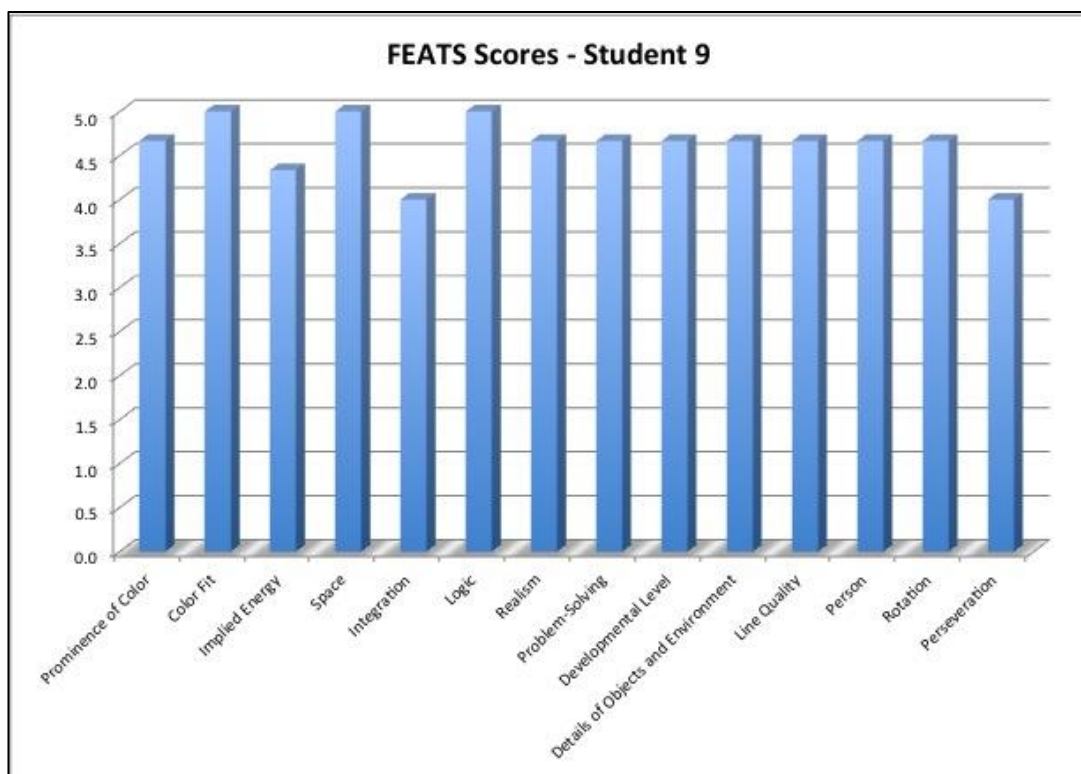


Figure 10. Kinetic Family Drawing and averaged FEATS scores, Student 9.

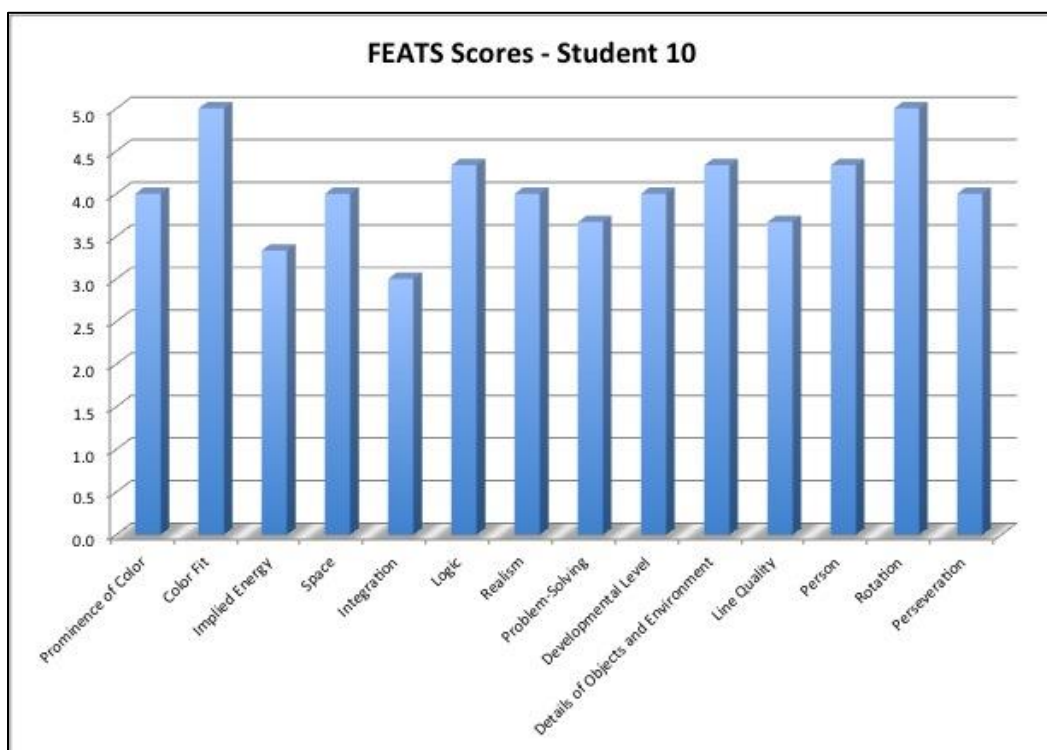


Figure 11. Kinetic Family Drawing and averaged FEATS scores, Student 10.

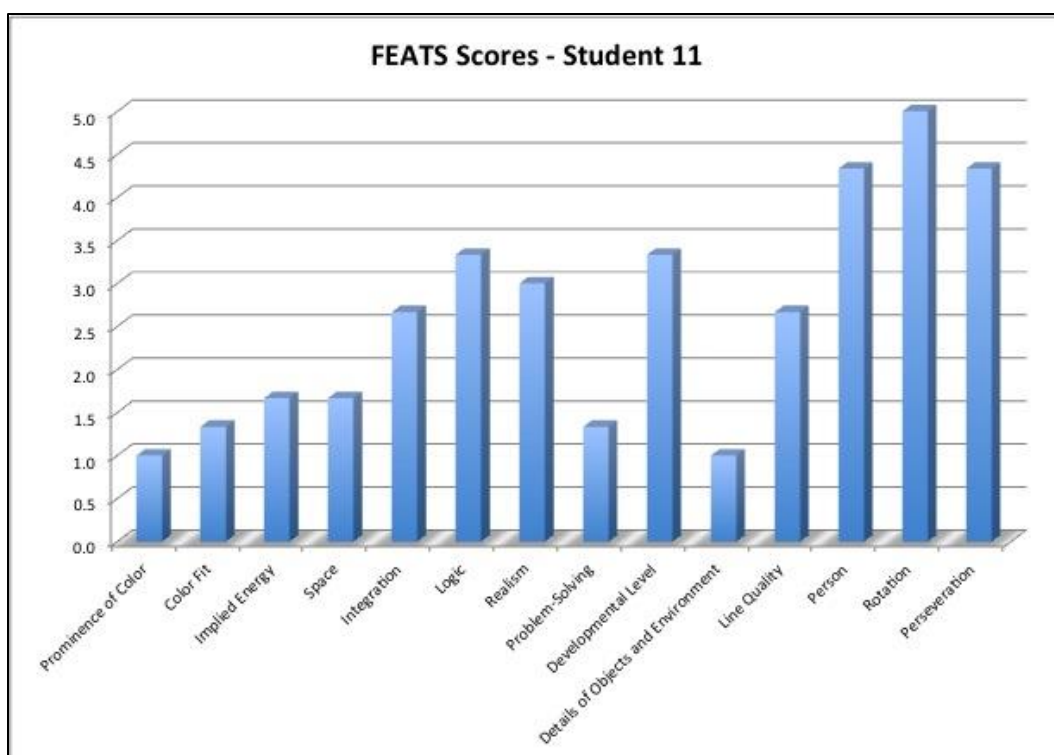
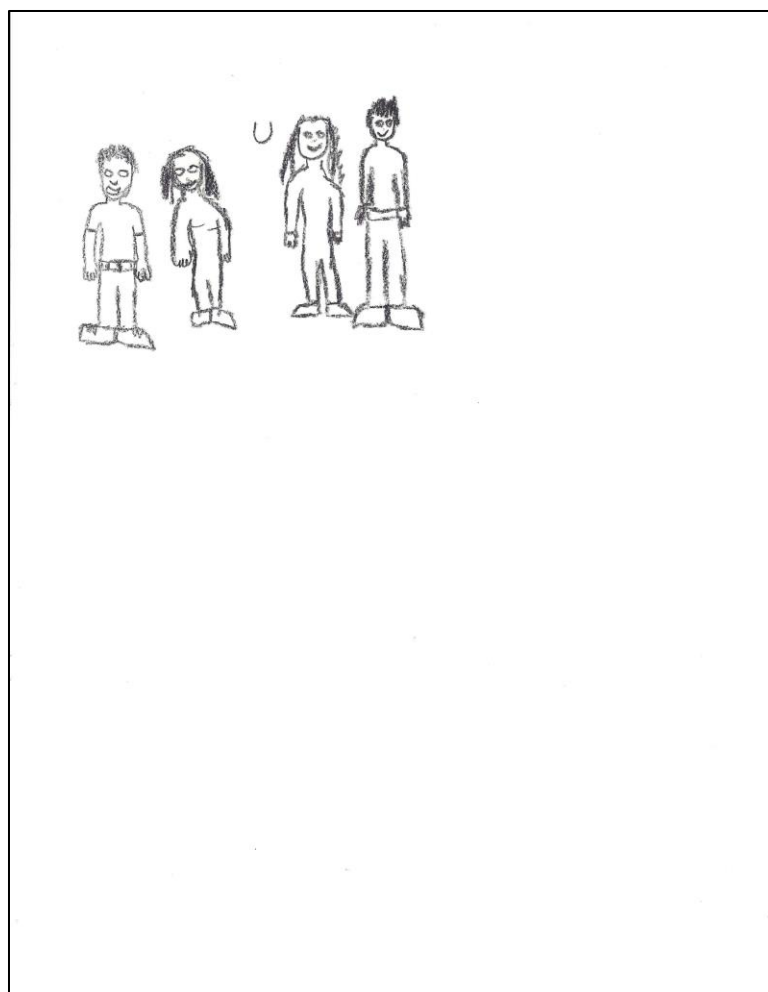


Figure 12. Kinetic Family Drawing and averaged FEATS scores, Student 11.

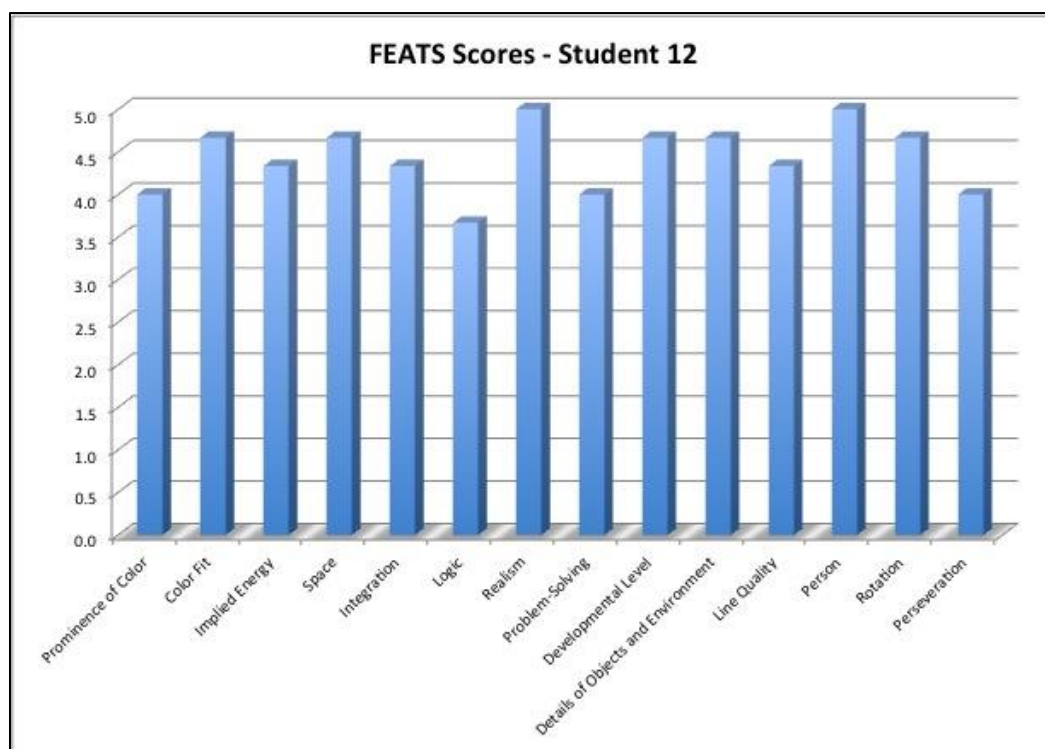


Figure 13. Kinetic Family Drawing and averaged FEATS scores, Student 12.

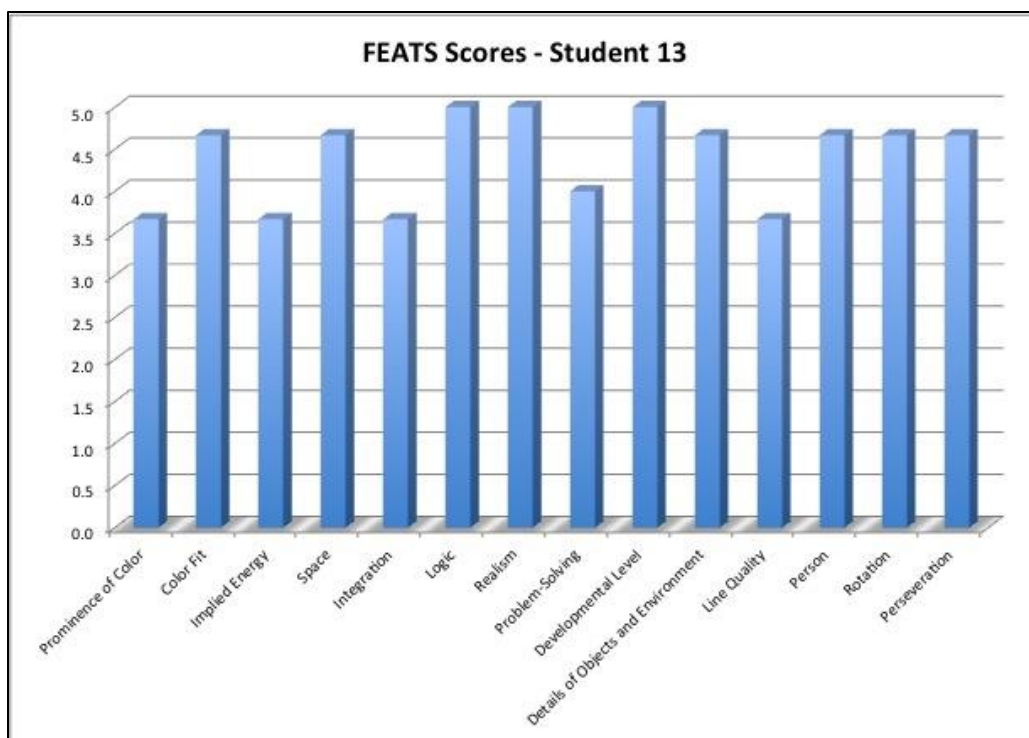
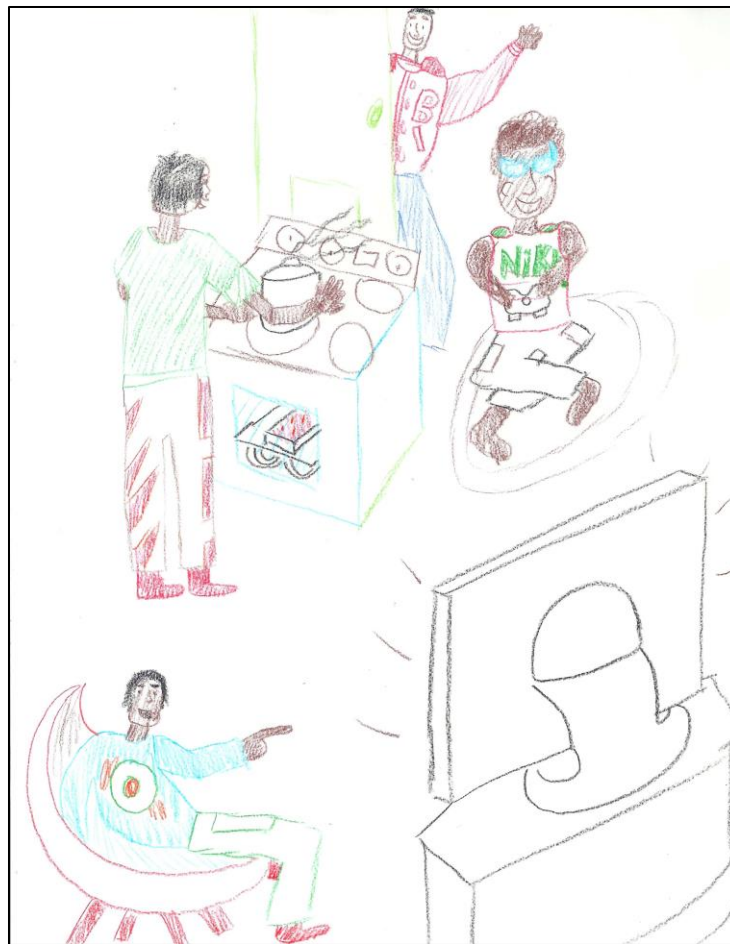


Figure 14. Kinetic Family Drawing and averaged FEATS scores, Student 13.

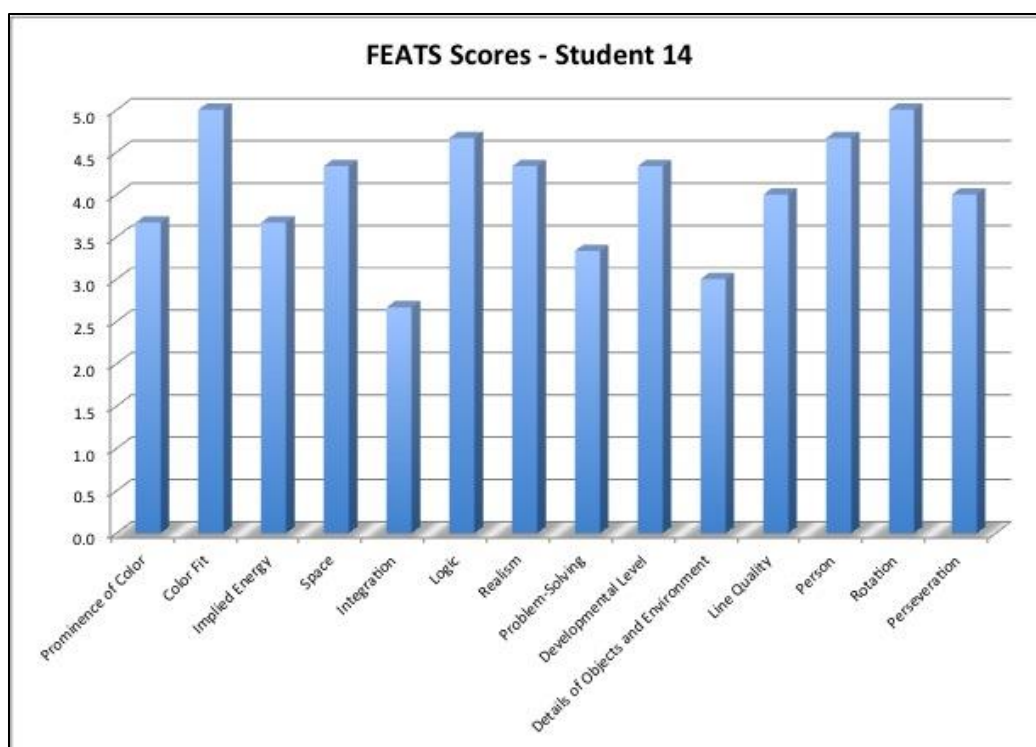


Figure 15. Kinetic Family Drawing and averaged FEATS scores, Student 14.

Figure 16 presents a comparison between the FEATS scores of the signing and non-signing groups' KFDs.

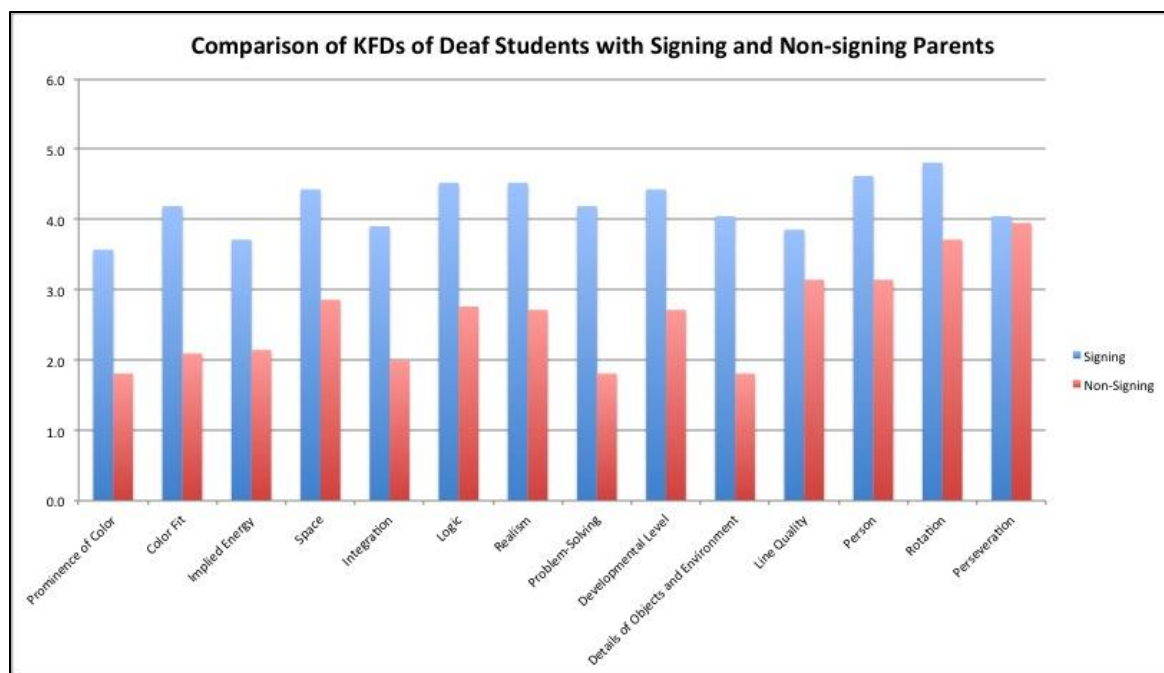


Figure 16. Comparison of FEATS scores for each group's KFDs.

The bar graph presents an approximately two-point difference between signing and non-signing groups for the following categories: prominence of color, color fit, implied energy, space, integration, logic, realism, problem-solving, developmental level, and details of objects and environment. A t-test conducted utilizing the averaged scores of the three raters' FEATS, resulted in $p < 0.001$. Because the p value is less than the significance level for rater variation ($p < 0.05$), it therefore follows that these results reject the null hypothesis that the two groups would exhibit no significant differences.

Chapter 5: Discussion

This study's hypothesis was that there would be a significant difference in the FEATS scores between the two groups in the study, the signing group and the non-signing group. The data analysis of the FEATS confirmed a significant difference between the two groups, rejecting the null hypothesis. 12 out of 14 students' KFDs had an average standard deviation of 0.59 or less, which manifested reliability and validity of the raters. This section will investigate the FEATS differences through five commonly occurring themes that were observed by the raters, as shown in Table 4.

Table 4.

Five Prominent FEATS Themes

FEATS theme	Signing	Non-signing
Prominence of color/Color fit	Variety use of colors; realistic; high energy	Monochromatic; minimal use; unrealistic
Integration/Logic	Fully integrated; logical;	Not at all integrated; illogical; disturbed spatial organization
Developmental level	Age appropriate level	Five- to eight-year old level
Details of objects and environment	Full environment; abundant details	No details or environment; floating figures/objects
Person	Realistic person; different perspectives of figure	No person and/or stick figures

After comparing the five themes, the discussion will lead into how this study's findings may translate into the clinical work of art therapists. Finally, limitations of the study will be presented along with possible implications for future research.

Major Findings

The first 10 out of the 14 FEATS scales showed a positive two-point difference between the signing parents group compared the non-signing parents group. Higher FEATS scores reflect

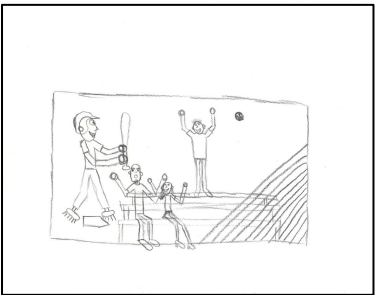

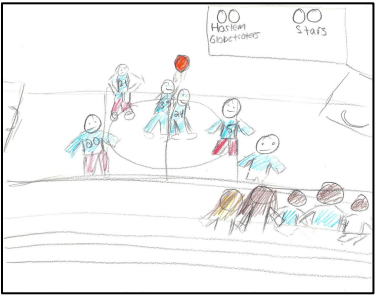
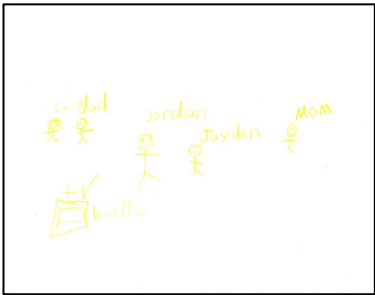

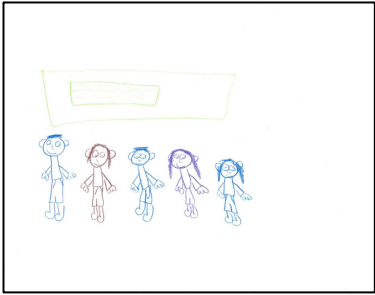
greater control of materials for representations, such as drawing objects showing a visual relation to each other in order to show an active knowledge of the environment (Engelhardt, 2008).

Lower FEATS scores may indicate possible struggles in cognitive abilities and psychosocial development of those with non-signing parents (Kolod, 1994), and may further indicate potential mental health issues such as depression (Hamilton, 2008). Hamilton (2008) conducted a study exploring artworks in correlation with major depression utilizing the FEATS rating sheets. In her study, the elements that presented indicators of major depression are lack of color, use of dark colors, constricted use of space, lack of environment, and lack of detail (Hamilton, 2008): These were all areas reflected in the current data from the non-signing group. Hamilton (2008) also presented in her results that the low-risk groups scored higher than the high-risk groups, particularly with scales rating color, energy, space, details, and person. Hamilton's (2008) findings are consistent with the data collected in this study, with the signing group considered normal in the average range, and the non-signing group considered lower than average. From understanding Hamilton's (2008) study, the signing group may reflect normal functioning in psychosocial and cognitive development areas and are at a low-risk for mental health issues due to their color use, energy, use of space, details, and person. The non-signing group manifested concerns in potential mental health issues due to their lack of color, constricted use of space, lack of environment, and lack of detail. The differences in the two groups suggest the significance of sign language communication for the child at birth to ensure proper development.

In Table 5 the KFDs are grouped according to the students' communication style with their parents (S for signing or NS for non-signing) to present a visual comparison for further discussion.

Table 5.

KFDs Organized by Signing and Non-signing Groups

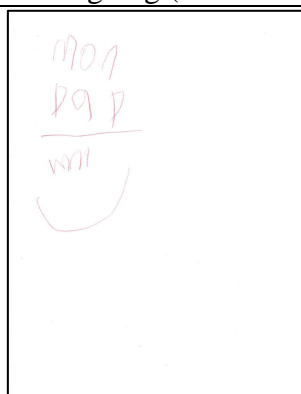
Signing	Non-Signing
 <p>KFD S1</p>	 <p>KFD NS1</p>
 <p>KFD S2</p>	 <p>KFD NS 2</p>
 <p>KFD S3</p>	 <p>KFD NS3</p>

Signing (continued)



KFD S4

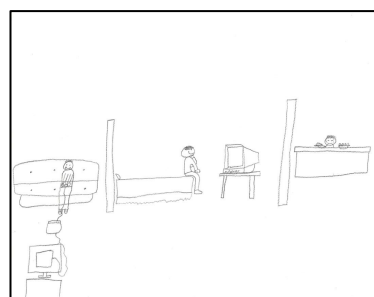
Non-signing (continued)



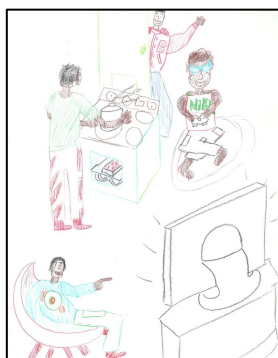
KFD NS4



KFD S5



KFD NS5



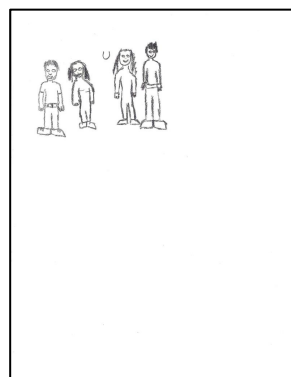
KFD S6



KFD NS6



KFD S7



KFD NS7

An analysis of the five prominent FEATS themes shown in the signing and non-signing groups considered the formal elements, themes, and symbols that emerged from the students' KFDs and were explored based on the understanding that the students drew particular symbols that are familiar to them, such as the activity and the environment. According to Furth, "The idea is not to decipher with accuracy what is within the picture ... as much as it is to ask concise questions as to what the picture may be communicating" (2002, p. 13). Exploration of the themes between the two groups are crucial to present information manifested in the drawings about the struggle of communication access that the non-signing group might experience in the home that can impact healthy development.

The first examined FEATS theme is prominence of color and color fit. In the signing group, the data indicated that the majority of the signing group presented color variety and realistic use of color. The use of color, in general, is related to affect and colors provide the emotional impact into drawings (Gantt & Tabone, 1998). One should consider the energy it takes to use a large range of color to fill a space and the appropriateness of the color choices in the image. The signing group seemed to be capable of this integration of the affective experience into the drawings. Levick (2003) discussed individuals who "have been encouraged to express themselves creatively and have acquired the necessary skill to do so" (p. 89), which was assessed in the signing group's ability of creative expression.

The lack of prominence of color and color fit was displayed in the non-signing group's KFDs. Before proceeding, one should be aware that translating and defining the meaning of colors is "an enormous undertaking...but theorists agree that colors can symbolize certain feelings, moods, even the tone of a relationship" (Furth, 2002, p. 97), and therefore color analysis can provide useful supplementary information when conducted by a therapist with a

thorough understanding. It is important to “consider how the color is used, where it is used on the page, quantity of the color used, what objects or material the color is used on, and the intensity of color displayed” (Furth, 2002, p. 97). With this understanding, this researcher noted a minimal use of color in KFDs NS2, NS3, NS4, NS5, and NS7 as well as an “out of place” use of color in KFDs NS2 and NS3. The minimal use of color and the color fit in this group revealed different areas of concern such as the inability to express creatively because the skills necessary to do so may be lacking.

The second prominent FEATS theme focuses on integration and logic of the graphic representation, in this case the family members portrayed. The signing group presented fully integrated and logical images of the family activity. Most of the activities took place outdoors with each family member participating in the activity, showing a balance into a cohesive whole. The integration of the family members in the signing group may be “connected with higher cortical [cognition and language] functioning and abstract thinking” (Gantt & Tabone, 1998). The family members were drawn next to each other in all of the signing group’s KFDs, which eliminated possible barriers that block communication and may indicate unity among members.

Some of the non-signing group manifested barriers and compartmentalization in their drawings while others showed lack of integration and disturbed spatial organization. The non-signing group frequently drew members standing in a straight line, indicating minimal interaction. Most of the activities drawn by the non-signing group were either standing in a straight line doing nothing or watching television, which portrays minimal interaction among members. Additionally, the barriers that were drawn in KFD NS5 and NS6 included walls and a tree placed between family members. In KFD NS5, the walls split each member, isolating them, as a potential indicator of compartmentalization. These “walls” prevent any interaction or

activity, indicating possible lack of communication or unity of the family (Burns & Kaufman, 1972). The barriers may indicate who is blocking whom from communicating and/or making contact (Furth, 2002). "This style is typical of social isolates who try to cut off the feeling component between individual members of the family. This is often the beginning stage in withdrawal of the individual or of serious character disorders" (Burns & Kaufman, 1972, p. 128). The inclusion of barriers presents concern regarding either a lack or a struggle with communication at the home that the Deaf student has with his/her non-signing parents.

The third prominent FEATS theme explores the developmental level the drawings displayed between the two groups. However, before proceeding, one must understand the intention of this FEATS scale. It is not to measure how artistically talented the person is, but what content has been drawn that is equivalent to that age group. For example, a scribble reflects a child at two years old as the child is learning motor skills, space, and movement. However, a 50-year-old adult drawing a scribble when asked to draw his family may reflect possible developmental regression. For this study, the raters determined the signing group fell into the category of presenting age appropriate levels in development by showing some artistic sophistication, realistic sizes for each object, and proper perspectives in environment. As the child grows up, they proceed through artistic developmental stages. The inclusion of a ground and horizon lines are a common indicator of the transition from a low developmental stage to adolescence and age appropriate adolescent and eventually adult art. The signing group displayed ground and horizon lines, which manifested the social need to communicate with peers and adults, which does promote the development of language skills (Levick, 2003). The higher the developmental level may indicate the increased ability to incorporate personal meanings, inspiration by emotions, social issues, and improving skills, which was manifested in the signing

group's KFDs. This could mean that this group is more capable of displaying their personal voice.

In a comparison of the two groups, the majority of the signing group included a ground and/or horizon line, whereas only a few of the non-signing group did so. Furthermore, the non-signing group frequently drew the figures as either stick people or figures typically produced by 5- or 6-year-olds. Levick (2003) stated, "these floating forms and childlike attempts to distinguish between females and males suggest that [this group] are functioning on a level much lower than [their] chronological age" (p. 96). The artistic developmental stage of a four- to seven-year-old child shows early understanding of nature and attempts to fill in the page, but also includes floating shapes and demonstrations of early attempts at human figure drawings. The non-signing group portrays an arrival at a schema (a way of representing an object), although it will be modified when the individual needs to portray something important about the current active knowledge of the subject. The non-signing group manifested a lower artistic developmental level compared to the signing group, which could reveal their current understanding and knowledge of their family, and could also portray isolation, disconnection, and separation.

The fourth prominent FEATS theme considers the details of the objects and environment that both groups either include or do not include other than drawing their family. The inclusion of a grounded environment in the signing group, manifested greatly in KFDs S2, S3, and S4, showed that they are observing what people do and often include details in the surroundings, such as other figures, trees, sky, and ground. As the signing group seemed to represent this realistically, the drawings showed the development of learning skills. Inclusion of a ground line indicated the signing group was at a higher stage of development compared to the non-signing

group with the inclusion of the integration of figures and environment, reflecting an activity that was taking place. One should consider the time and energy spent to add abundant details in the environment that may not be essential, as shown in KFD S2, S3, and S4, which portrays the ability to identify, communicate, and express additional information due to their appropriate levels of psychosocial development. This analysis suggests the signing group's ability to identify themselves in their environment and the ability to develop relationships with other people.

The non-signing group's attention to details of objects and environment is visually lacking in KFD NS2, NS3, NS4, NS5, and NS7. There are either very little details or absolutely no details in the environment, leaving the figures floating in space. According to Levick (2003), floating objects "point to inconsistencies that warrant close observations of [the students'] behavior and [their] interactions with peers and adults" (p. 95). This concern of lacking environment in majority of the non-signing KFDs embodies possibilities of mental health issues such as depression where people include fewer details in their drawings than the non-depressed people (Gantt & Tabone, 1998). The inability to include an environment also may indicate that the non-signing group is functioning at a lower developmental level.

The fifth prominent FEATS theme explores how the two groups drew the person/figure. None of the signing group included a KFD drawn with stick figures or disconnected figures, which, according to Levick (2003), indicates proper cognitive and social levels for their age. Most of the signing group's KFDs such as KFDs S1, S3, S4, and S5 showed the figures in motion and in realistic proportion to each other (Levick, 2003). With this group's ability to draw realistic figures, their KFDs also manifested the ability to show variety in figure orientation. KFD S1 showed one of the figures facing in a different direction than the other three family members, indicating an ability to organize a creative composition to express the activity. KFD S3

drew an in-depth background to show how high the roller coaster was, which could be indicative of problem-solving skills. KFD S4, S5, and S6 presented figures facing toward different directions, indicating some advancement in artistic and learning skills (Levick, 2003). The figures were fully formed and clearly presented. Additionally, the signing group presented most of their family members' bodies with depth perception, indicating movements and rotations according to the activity that was taking place. This indicates the signing group manifests skills observing what people do and details in their surroundings. Levick (2003) supports this observation by stating "the ability to draw [clear and complete] figures and organize shapes and forms to tell a story indicates that [the individual have] advanced learning skills" (p. 60), which refers to the developmental and functioning abilities of the signing group.

The majority of the non-signing group either drew stick figures or omits body parts and/or the figure entirely from the picture. Omission of figures in KFD NS1 may indicate a possible developmental issue or the child's anxiety, ambivalence, and/or anger toward certain members that s/he cannot express (Burns & Kaufman, 1972). According to Furth, "Missing individuals are often a sign of conflict" (2002, p. 46). Although this student states he lives with his mother and aunt, omitting them from this drawing may indicate feelings of ambivalence or anger toward them. In KFD NS6, a noticeable omission of both arms of the figure on the far left (the mother) and one arm on the third figure from the left (the father) may indicate some ambivalence and perception this student has toward her parents about a possibility that they do not reach out and communicate with her using their arms and hands (Furth, 2002).

Overall, the FEATS scores showed that the non-signing group presented lower psychosocial and cognitive developmental levels in prominence of color and color fit, integration and logic, developmental level, details of objects and environment, and the person. Malchiodi

(1998) discussed a study conducted by Wadeson (1971) on drawings of depressed adults, “noting that when severe depression was present, less color was used, empty space was increased, less effort and investment were shown in the process, and more constricted and less meaningful imagery was included” (p. 120). Wadeson (1971) provided indicators of depression that may underscore this current study and suggest that the non-signing group reflects symptoms of depression and withdrawal as identified through drawn themes and symbols. The indicators may portray the struggle the non-signing group have with their families due to accesses in communication. The less access to communication the Deaf student have, the more withdrawn and isolated the Deaf student appears to be.

The drawings are an excellent tool for working with the individual as a whole person, but it is equally important to elicit verbalizations from the artist to fully understand and translate for the individual what s/he has presented on paper (Furth, 2002). “Asking children questions about their drawings encourages them to tell the therapist many things beyond the visual content of the drawing itself” (Malchiodi, 1998, p. 48). The verbalizations that were obtained from asking students to explain features of their drawings provided additional information on some of the students’ perspectives of their family. For the signing group, a common theme emerged in regards to when the family activity occurred: most activities depicted occurred in a range from one to two years ago. This may indicate the ability to identify favorite activities throughout the signing groups’ lives and their ability to retell stories through communication to solidify the memory into their personal timeline. The non-signing group provided family drawings with verbalizations of unknown date or time, suggesting this group has an inability to process memories of a childhood with full communication with the family as the interaction may be lacking.

The ability to recognize, place, and relate to feelings and emotions toward other people require higher cognitive and psychosocial functioning. Common responses provided by the students in the signing group when asked how each person was feeling included feeling proud of themselves, feeling good and happy, having a great time, being comfortable and relaxed. The majority of the non-signing group provided a one-word answer for this question, which was "happy." The student who produced KFD NS5 replied, "Wow, my brother, I do not know. He always stays in his room. I am happy because I am enjoying my movies in my room. My grandma is tired." This student's response reflected his inability to identify and place emotions because he isolates himself in his bedroom from any interaction with his family members.

When asked if there was anything they could change about their picture, the majority of the students in the signing group replied that they wished they could add more color but were not able to due to time and/or the limited choice of 12 colors that were provided to them. This continues to validate that the use of color and space is meaningful to the signing group. The majority of the non-signing group responded that they did not want to change anything about the picture, possibly reflecting a continued state of insecurity, isolation and withdrawal from the family.

Clinical Applications

The application of art therapy with D/deaf clients reflects a growing understanding of the unique accessibility and benefits art contributes to the therapeutic process:

It is true that art can provide a window to children's problems, traumatic memories, and other powerful and troublesome experiences, its primary purpose is to give the child another language with which to share feelings, ideas, perceptions, fantasies, and observations about self, others, and the environment. (Malchiodi, 1998, p. xv)

In all children, the emergence of behavior coincides with the child's development of an understanding of the self. "A behavior can be a key to assessing a child's developmental well-being. Looking at a child's pictures is one method for identifying and evaluating these behaviors" (Levick, 2003, p. x). The child's conscious continues to strive for balance, so the "unconscious either complements or compensates the conscious" (Furth, 2002, p. 8). When the unconscious complements the conscious, both worlds harmonize and may even reflect each other. When the unconscious compensates the conscious, the unconscious brings opposition to the conscious world and provides a balancing effect in the psyche (Furth, 2002). It is important for the observer of the drawings to discover whether a picture compensates or complements the individual's psyche and assist the individual in considering and incorporating this information into his/her life (Furth, 2002).

A simple drawing of a house to the untrained eye may appear to be a typical child's drawing, to the trained eye of the art therapist, the significance of what is included or omitted in the artwork reveals themes and other information. Further examination of the KFDs in this study, including identifying signs and recognizing how these students naturally express themselves in the moment, allowed the researcher to focus on and explore some of the deviations from the norms of artistic developmental levels, which Levick (2003) suggests may indicate some problems in specific developmental areas. Additionally, the importance of symbols and the way symbols manifest their significance through drawings brings the art therapist "...closer to the use of symbols as a healing agent. This agent is both psychologically and somatically involved in the development of what Jung calls the 'individuation process'" (Furth, 2002, p. 1).

Levick (2003) states that the artist creates order out of disorder:

This disorder may be something the artist feels inside or something chaotic perceived in

the environment. Whatever the source, the artistic image that emerges is one that is orderly and said to be “universally appealing.” This term does not mean that everyone who looks at a given work of art will like it... The result is that the viewer will relate to the subject matter and not to the person of the artist. (p. 1-2)

Understanding the indicators and symbols of a student's KFD and the defensive processes students use to guard against anxiety allows the therapist to better understand the dynamics of an individual's personality, and cognitive and psychosocial developmental levels (Engelhardt, 2008):

In the field of psychology, defense mechanisms are inferred from the behavior and verbalizations of individuals. Art therapists have additional information in the form of client artwork in order to help them formulate their own view of an individual's [developments]. (Engelhardt, 2008, p. 80)

Through the FEATS rating system and themes developed from the KFDs, it becomes possible for the art therapist to identify and explore defense mechanisms, cognitive, and psychosocial developments. Utilizing the KFD may help clients/therapists explore the client's family dynamics, importance of each family member, and the client's supports and resources available to them. Interactions among family members in the KFD may suggest the presence of ego functions such as problem solving, integration, and reality testing. “In clinical work, the ability to assess a [client's] awareness of and utilization of support systems is an important aspect in determining level of care and appropriate therapeutic services” (Engelhardt, 2008, p. 81).

Limitations of the Study

This study's results may have been affected by the small sample size, the methods used

for data analysis, and interrater reliability. Consideration of each of these areas may assist future researchers in establishing alternative methods of analyzing reliability and validity when undertaking a similar study.

The small sample size of 14 participants does not allow for generalization to a larger population. There was also no analysis or correlation of grade, gender, race/ethnicity, and age of participants and the results. Determining if other factors contributed to variance between scores could lead to new interpretations of the data.

Rater agreement was determined through average standard deviations among raters through the assignment of FEATS scores. All of the raters scored on a one-point interval, which may have some impact on the average scores. Consideration of ensuring the raters understood the half intervals might allow greater precision in scoring.

The KFD administration took place in a classroom with each student sitting next to the researcher. Drawing might be intimidating if a student was anxious about being watched while s/he drew. In consideration of this, having the researcher appear to look busy writing or reading papers while keeping an eye on the drawing process may reduce anxiety and hurriedness to complete the drawing.

There was a limitation in student inclusion criteria. One student had multiple disabilities (not including deafness) that might alter results greatly, because the student did not understand the researcher's directive, instead responding through imitations of signs that the researcher used. Further consideration of participant criteria may allow future researchers have more accuracy of data comparison such as exclusion of students who are in curriculum plans for multiple disabilities.

Another limitation identified in this study was that only 16 parental consent forms were

returned, out of 187 recruitment letters mailed out. With limited time to complete the data collection, the researcher proceeded with the 14 who were available within the 2-week time span, limiting the number of participants. Future studies should have a time span of over a year to be able to obtain a larger number of participants. With a larger time margin, additional rounds of mailing the parental consent forms may increase student recruitment. Another suggestion for a thorough study is to include other individuals who are deaf and do not attend a school for the Deaf. Those individuals may present additional significant differences or generate other new findings to validate the importance of communication.

Lastly, this researcher has attempted to remain neutral throughout the entire study to provide data elicited directly from the FEATS scores and discuss observable themes from the KFDs, however the final limitation includes a potential bias in the study due to the researcher being Deaf. Because this researcher grew up within a signing environment, there are potential biases in discussions and implication points that lead toward recommendations in using sign language at birth. Regardless, this researcher believes that **data gleaned from the study** leaves the reader with sufficient evidence to reach the same conclusion.

Chapter 6: Summary and Conclusions

The purpose of this study was to examine and compare two groups of Deaf students and their Kinetic Family Drawings (KFD) based on their communication style at home: signing or non-signing parents. This study was built upon previous research on communication, language, and art therapy for the deaf; and the KFD and the Formal Elements Art Therapy Scale (FEATS). The literature focused on the issue of whether a Deaf child's cognitive and psychosocial developments are impacted by whether the family communicates in the same language or not.

Family relationships are crucial in any child's cognitive and psychosocial development. "The experience of early family life ... has a major impact on children's physical and emotional development, on their development of interpersonal relations skills, and on the development of their personality" (Fan, 2012, p. 175). Administering the KFD can be helpful in identifying an individual's interaction with the family, further understanding the individual's personality dynamics, and identifying preferred coping methods, interpersonal skills, and cognitive and psychosocial development. Continued exploration on the communication style at home continues to be significant in understanding and further classifying proper development for any child and especially for, according to this study, the deaf child.

Fourteen students, from sixth grade to 11th grade, were recruited to participate in the study. Each of the students completed a Kinetic Family Drawing, answered questions regarding the drawing, and completed a demographic questionnaire. Raters used the FEATS to measure graphic variables of the students' KFD drawings. Assessment of rater agreement provided evidence of interrater reliability using the FEATS system. A t-test provided statistical comparison of the signing and non-signing groups, and indicated evidence of significant difference between Deaf students with signing parents and non-signing parents.

Data analysis revealed that the signing group had developed communication and learning skills during childhood that were manifested in how they portrayed their family interaction: figures are clear and complete; family members are frequently engaging in an activity together; the representation showed integration and a full use of space and color, and organization of shapes and forms to tell a story. When the child learns how to communicate with and relate to others, the development of language speeds up: "Every intellectual advance of children must be mastered before they can move to the next level... if [the child's] artistic skills parallel learning skills, these advances will be evident in their creative expressions" (Levick, 2003, p. 101). Encouragement of creative expression and acquiring the necessary skills to do so (Levick, 2003) may indicate a high level of communication at the home, a conclusion reflected in the signing group's KFDs.

Recurring themes in the KFDs of the non-signing group, including figures floating in space and childlike attempts to distinguish between females and males, may indicate this group is functioning on a lower level (Levick, 2003). Family members represented are either standing rigidly in space or watching television. Other notable characteristics of the non-signing group's KFDs include omission of figures, barriers, and compartmentalization. These symbols raise concerns regarding withdrawal, isolation, and depressive traits associated with lower cognitive and psychosocial development as a manifestation of limited communication in the family (Burns & Kaufman, 1972).

Creative expression manifested in the KFDs should be viewed as a reflection of the society as a whole. The creativity evident in the signing group's KFDs reflects the signing Deaf community's wholeness in cognitive and psychosocial areas of development. It is saddening to see the non-signing group's KFDs reflect a lonely, isolated world where communication with

family members is not accessible.

Despite the limitations of this study, the findings revealed concerning issues related to language and communication for children who are Deaf. The findings support other studies that encourage signing as a mode of communication for the Deaf child to ensure proper development of cognitive and psychosocial areas. This researcher hopes that the findings of this study enhance Deaf children's communication and interaction with his/her family from birth.

Implications for Further Research

This research's findings confirm communication continues to be a vital element of a child's psychosocial and cognitive developments. A deaf child's self-esteem is influenced by his/her parents' communication method; therefore parents who are highly skilled in sign language can positively influence their deaf child's self-esteem (Desselle, 1994). It seems likely that a deaf child's development will be hindered because of parental denial about their child's deafness. Despite this, all efforts should be made to address the likely language development delay that often occurs in situations like this (Desselle, 1994). When the deaf child eventually learns sign language at a later age, the child usually ends up suffering delays in both areas of reading/writing and sign language. For one to feel fully accepted within themselves, their culture, and the society at large, it is usually important for one to feel fully comfortable with the language. Sign language is one of the main features of Deaf culture, so if the deaf child learns sign language at a later age, s/he may feel uncomfortable or recognize that s/he is not fluent yet. This ends up creating further impacts on the psychosocial developmental areas such as self-esteem due to the isolation and frustration that one experience in the inability to express oneself fully, and to easily understand others completely (Humphries et al., 2002).

The medical community continues to try to fix the problem of the ear, but does not seem

to attend to psychosocial and cognitive developments that continue to fail to meet normal levels of development. There are several common healthcare strategies that cause harm to the deaf child rather than helping such as the failure to inform:

Many medical professionals faced with the parents of a deaf newborn or a newly deafened child tell them that there are two routes with respect to language and educational choices: the oral route (i.e., access to spoken language only) and the manual route (i.e., using sign language with the child). Presented in this way, parents often think their choice is between their child speaking English or communicating using signs that are not understood by most people in the society. (Humphries et al., 2002, p. 3)

One must understand that when faced with the decision on the way the doctors presented:

The parents may view sign language as an inferior choice or a last resort and not fully understand that sign language is a human language with the linguistic complexity and expressiveness of spoken language. (Humphries et al., 2002, p. 3)

When parents experience this confusion and stress that they may be failing their child, this period of indecisiveness may delay the child's critical opportunity for language acquisition and communication.

An implication from this study is to recommend sign language from birth. All children need and deserve an accessible language. Accessible language is a biological need and deaf children should be given an opportunity to interact with other Deaf peers (signing children) during their childhood to ensure proper development of social and communicative abilities (Humphries et al., 2002). Some parents may wish for their child to learn spoken language. The intention of this study is not to eliminate the use of spoken language for the deaf people, but to emphasize the importance of learning sign language *with* any other communication methods.

This researcher emphasizes that “using a sign language is not an inferior method of communication, but that sign language are complex, expressive languages in which any matter can be communicated, no matter how technical or nuanced” (Humphries et al, 2002, p. 5).

However, it is a continuing struggle for the delivery of medical services to the deaf child across the relevant health professionals. Humphries et al. (2002) emphasized in their study on how important it is for the medical community to work together and ensure follow ups of the deaf child. What usually happens is that the physician will make the initial referral to the audiologist, and then the audiologist will either refer the deaf child to a surgeon for a cochlear implant (if the parents choose this direction) or toward other agencies that provide additional services. These agencies may not prompt follow-ups, or to put it plainly, do not work together. The deaf child becomes lost in the transitions and passes critical developmental stages. If the parents wish for other modes of communication for their deaf child, it is strongly recommended that the child be taught sign language as well.

An additional implication from this study is to promote the importance of clinical art therapy practice in working with deaf people. Creative self-expression may transcend the limitations of communication and becomes a medium to help deaf people initiate communication. The hands will be used not only for sign language but also for the art, which in turn creates communication, therefore it is suggested that art therapy is an excellent way to promote self expression. Clinical art therapy practice supports inclusion of individual therapy with children focusing on identity issues as an individual who is Deaf, communication issues, and exploration of possible feelings of isolation and withdrawal. Moreover, family therapy is suggested for resolving communication issues among family members. Parents' resources and sources of strength should be identified and utilized in interventions for promoting supportive

communication with their deaf child. Yet, there is scarce research in the field of art therapy about the deaf population. More research within this field is needed to enhance art therapy services for this population who depends on the eyes and the hands for communication.

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APPENDIX A: Cover Letter / Informed Consent

November 12, 2013

Dear Parents/Guardians,

My name is Amanda Krieger. I am currently an art therapy graduate student from Herron School of Art and Design at IUPUI. I am also proud to be a 2006 alumna of the Indiana School for the Deaf. As a student, I attend classes at IUPUI and am conducting my internship at ISD. I will graduate with my Master's Degree in Art Therapy in May 2014. As part of the school's requirements for graduation, I must complete a thesis research study.

For my research, I wish to conduct a research study at ISD with a minimum of fourteen (14) students and a maximum of twenty-eight (28) students as my participants. The target students will be those who are in middle school and in high school. I will have the students engage in a single drawing task. To determine the participants, the students who can contribute to my study are those who must have their parent agreement form mailed back to me first before participation can take place.

You are receiving this letter because your child is in middle school or high school. Any information your child creates in the study will be kept confidential. No names will be used, as your child's drawing will be marked with a number instead.

Attached with this letter is the consent form that you will need to sign to allow your child to participate in my research. I want to thank you in advance for allowing your child to be a part of this project, which contributes toward my progress in obtaining my Master's degree and toward the knowledge of the field of art therapy. There is insufficient research in art therapy on people who are deaf. I believe that this study will be greatly beneficial for the deaf.

Please mail the completed form to:

Ms. Ruth Asher Lynch
CC: Amanda Krieger
1200 E. 42nd St.
Indianapolis, IN 46205

Or return the signed form via your child to give to the Middle School Secretary, Cindy Squire, in person.

Sincerely,

Amanda Krieger, Art Therapy Student

IRB Study# 1311804408**INDIANA UNIVERSITY - PURDUE UNIVERSITY INDIANAPOLIS (IUPUI)
INFORMED CONSENT STATEMENT FOR****Kinetic Family Drawing Comparisons of Students who are Deaf with Signing Parents and Students who are Deaf with Non-signing Parents**

Your child is invited to participate in a research study comparing the differences in art of children who are Deaf with signing parents and children who are Deaf with non-signing parents. I ask that you read this form and ask any questions you may have before agreeing to allow your child to be in the study.

Amanda Krieger is conducting the study for her Masters thesis under Indiana University Purdue University - Indianapolis (IUPUI).

STUDY PURPOSE

The purpose of this study is to collect family drawings of children who are Deaf with signing parents and children who are Deaf with non-signing parents. The researcher will compare and analyze the differences in the artworks of both groups.

NUMBER OF PEOPLE TAKING PART IN THE STUDY:

If you agree to allow your child to participate, s/he will be one of the minimum of fourteen (14) subjects or a maximum of twenty-eight (28) who will be participating in this research

PROCEDURES FOR THE STUDY:

If you agree to allow your child to be in the study, s/he will do the following things in an open room that will be visible by other adults:

- Your child will be asked to draw his/her family doing something at a place.
- The researcher will provide an 8 1/2" x 11" white paper and a set of twelve (12) colored pencils.
- Your child will answer some questions regarding the family drawing.
- Your child will be asked to fill a one-page questionnaire after completion of the drawing.
- Your child will proceed at his/her own pace, usually from fifteen (15) minutes to one hour.
- Your child will be asked to participate in this study only once.

RISKS OF TAKING PART IN THE STUDY:

While on the study, the risks (discomforts) are:

- Feeling uncomfortable about drawing in front of the researcher
- Feeling uncomfortable about drawing/discussing his/her family

Not all of the risks may apply to your child. Things may happen that the researcher does not know about yet. But if they do, the researcher will make sure that your child will get appropriate attention to deal with anything that might happen.

BENEFITS OF TAKING PART IN THE STUDY:

The benefits of participation that are reasonable to expect are:

- Your child may benefit in analyzing his/her own drawing to recognize his/her role in your family.
- Your child will have the opportunity for personal exploration.
- Drawing may help your child feel relaxed.

ALTERNATIVES TO TAKING PART IN THE STUDY:

Instead of being in the study, you have an option to decline your child's participation.

IRB Study# 1311804408

CONFIDENTIALITY

Efforts will be made to keep your child's personal information confidential. I cannot guarantee absolute confidentiality. Your child's personal information may be disclosed if required by law. Your child's identity will be held in confidence in reports in which the study may be published and databases in which results may be stored.

Organizations that may inspect and/or copy your child's research records for quality assurance and data analysis include groups such as the study investigator and her research associates, the Indiana University Institutional Review Board or its designees, the study sponsor, Ms. Juliet King, MA, ATR-BC, LPC, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP), who may need to access your research records.

PAYMENT

Your child will not receive payment for taking part in this study.

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study or a research-related injury, about your child's rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the researcher Amanda Krieger through email: amikrie@iupui.edu.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at (317) 278-3458 or [for Indianapolis] or (812) 856-4242 [for Bloomington] or (800) 696-2949.

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. Your child may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which your child is entitled. Your child's decision whether or not to participate in this study will not affect your child's current or future relations with the researcher or the school.

SUBJECT'S CONSENT

In consideration of all of the above, I give my consent to allow my child to participate in this research study.

Child's Printed Name: _____

Printed Name of Parent: _____

Signature of Parent: _____ Date: _____

Printed Name of Person Obtaining Consent: _____

Signature of Person Obtaining Consent: _____ Date: _____

<p><i>For IRB Office Use ONLY</i></p> <p>IRB Approval Date: <u>Dec 19, 2013</u></p> <p>Expiration Date: <u>Dec 2, 2015</u></p>
--

APPENDIX B: Assent Form**INDIANA UNIVERSITY - PURDUE UNIVERSITY INDIANAPOLIS (IUPUI)
ASSENT TO PARTICIPATE IN RESEARCH****Kinetic Family Drawing Comparisons of Students who are Deaf with Signing Parents and Students who are Deaf with Non-signing Parents**

I am doing a research study. A research study is a special way to learn about something. I am doing this research study because I am trying to find out more about differences in drawing between students who are Deaf with signing parents and students who are Deaf with non-signing parents. I would like to ask you to be in this research study.

Why am I being asked to be in this research study?

You are being asked to be in this research study because you fit in one of the two groups. A letter of consent has been sent to your parents and they have approved for you to participate in this study.

What will happen during this research study?

I want to tell you about some things that might happen if you are in the study. This study will take place at my classroom at the Indiana School for the Deaf. I think it will last for around 15 minutes to one hour, depending on your pace.

If you want to be in this study, here are the things that I will ask you to do.

- I will ask you to draw your family doing something together at a place.
- I will provide an 8 1/2" x 11" white paper and a set of twelve (12) colored pencils.
- After you complete the drawing, you will be asked to answer some questions about your family to provide more information about your picture.
- I will give you one sheet of paper for you to fill out some background information about yourself before you can go back to your class.

Are there any bad things that might happen during the research study?

Sometimes bad things happen to people who are in research studies. These bad things are called "risks." One risk of being in this study might be that you would feel uncomfortable drawing in front of me. You might feel uncomfortable drawing your family.

Not all of these things may happen to you. None of them may happen. Things may happen that I do not know about yet. If they do, I will make sure that you get help to deal with anything bad that might happen.

Are there any good things that might happen during the research study?

Sometimes good things happen to people who are in research studies. These good things are called "benefits." The benefits of being in this study might be:

- Learning more about your family
- Learning about yourself
- Help you calm your mind and feel relaxed while drawing

I don't know for sure if you will have any benefits. I hope you learn something that will help you some day.

Assent Form (continued)**Will I get money or payment for being in this research study?**

You will not get any money for being in this research study.

Who can I ask if I have any questions?

If you have any questions about this study, you can ask me. Also, if you have any questions that you can't think of now, you can ask me later the next time you see me in person or through email. My hours of availability are on Mondays at 12:30 - 1:30 pm, 2:30 - 3:30 pm and Thursdays at 1:30 - 2:30 pm or contact me through email at: amikrie@iupui.edu.

What if I don't want to be in the study?

If you don't want to be in this study, you don't have to. It's up to you. If you say you want to be in it and then change your mind, that's OK. All you have to do is tell me that you don't want to be in it anymore. No one will be mad at you or upset with you if you don't want to be in it.

My choice:

If I write my name on the line below, it means that I agree to be in this research study.

Subject's Signature

Date

Subject's Name

Signature of person obtaining assent

Date

Name of person obtaining assent

For IU Human Subjects Office Use ONLY

IRB Approval Date: Dec 19, 2013

Continuing Review Date: Dec 2, 2015

APPENDIX C: Kinetic Family Drawing Questions

QUESTIONS TO ASK PARTICIPANTS AFTER COMPLETING THE KINETIC FAMILY DRAWING

1. Tell me about this picture.
2. Can you identify each person in this picture?
3. Are there any people who are deaf?
4. What is each person doing?
5. How is each person feeling?
6. Where and when did this event occur?
7. How close are you with your family? Who do you get along with the best/least?
8. Describe anything that you wish to change about the picture if you can.

APPENDIX D: Student Questionnaire

Grade: _____ Age: _____ Date: _____

Gender: _____

Race: (ex: African American, Asian, Caucasian): _____

How do you communicate with your parents? Please check all that applies to you:☐ ASL ☐ Signed Exact English (SEE) ☐ Gestures☐ Speech ☐ Writing ☐ Fingerspelling ☐ Do not talk to them at allHow do you communicate with your siblings if any? Please check all that applies to you:☐ ASL ☐ Signed Exact English (SEE) ☐ Gestures☐ Speech ☐ Writing ☐ Fingerspelling ☐ Do not talk to them at all

APPENDIX E: Rater's FEATS Rating Sheet

Picture #: _____

Rater: _____

**FORMAL ELEMENTS ART THERAPY SCALE (FEATS)©
RATING SHEET**

Linda Gantt, Ph.D., ATR-BC, & Carmello Tabone, M.A., ATR

The FEATS uses scales that measure **more or less** of the particular variable. Look at the degree to which a picture fits the particular scale by comparing the picture you are rating with the examples in the illustrated rating manual. **You may mark between the numbers on the scales.** Approach the picture as if you did not know what it was supposed to be. Can you recognize individual items? If you have a picture that is hard to rate, do your best to compare it to the illustrations and the written descriptions. Do not worry whether your rating is the same as another rater's. Concentrate on giving your first impression to the variable being measured.

#1 - Prominence of ColorColor used for
outlining only

0 | 1 | 2 | 3 | 4 | 5

Color used to fill
all available space**#2 - Color Fit**Colors not related
to task

0 | 1 | 2 | 3 | 4 | 5

Colors related to
task**#3 - Implied energy**

No energy

0 | 1 | 2 | 3 | 4 | 5

Excessive energy

#4 - SpaceLess than 25% of
space used

0 | 1 | 2 | 3 | 4 | 5

100% of space used

#5 - IntegrationNot at all
integrated

0 | 1 | 2 | 3 | 4 | 5

Fully integrated

#6 - LogicEntire picture is
bizarre or illogical

0 | 1 | 2 | 3 | 4 | 5

Picture is logical

From: L. Gantt & C. Tabone, 1998, *The Formal Elements Art Therapy Scale: The Rating Manual*,
Morgantown, WV: Gargoyle Press. Copyright © 1998 Linda Gantt.

This is a revised version of the rating sheet for the Formal Elements Art Therapy Scale, © 1990, Linda Gantt.
This rating sheet may be reproduced in quantity by researchers. For other uses, written permission is needed.

#7 - RealismNot realistic (cannot
tell what was drawn)

0 | 1 | 2 | 3 | 4 | 5

Quite realistic

#8 - Problem-solvingNo evidence of
problem-solving

0 | 1 | 2 | 3 | 4 | 5

Reasonable solution
to picking apple**#9 - Developmental Level**Two-year-old
level

0 | 1 | 2 | 3 | 4 | 5

Adult level

#10 - Details of Objects and EnvironmentNo details or
environment

0 | 1 | 2 | 3 | 4 | 5

Full environment,
abundant details**#11 - Line Quality**Broken, "damaged"
lines

0 | 1 | 2 | 3 | 4 | 5

Fluid, flowing
lines**#12 - Person**No person
depicted

0 | 1 | 2 | 3 | 4 | 5

Realistic person

#13 - RotationPronounced
rotation

0 | 1 | 2 | 3 | 4 | 5

Trees & people,
upright, no rotation**#14 - Perseveration**

Severe

0 | 1 | 2 | 3 | 4 | 5

None

From: L. Gantt & C. Tabone, 1998, *The Formal Elements Art Therapy Scale: The Rating Manual*,
Morgantown, WV: Gargoyle Press. Copyright © 1998 Linda Gantt.

This is a revised version of the rating sheet for the Formal Elements Art Therapy Scale, © 1990, Linda Gantt.
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APPENDIX F: Modified FEATS scales**Directive:**

“Draw a picture of everyone in your family, including you, *doing something*. Try to draw whole people, not cartoons or stick people. Remember, make everyone *doing something* – some kind of action” (Burns & Kaufman, 1970, p. 19-20).

Colors in **RED** indicate slight differences in using the scales for the KFD.

Scale	Kinetic Family Drawing (KFD)	Person Picking an Apple from a Tree (PPAT)
Scale #1: Prominence of Color	How much color a person uses in the entire picture. Does the artist use a color only to outline a form, or does he or she color in the forms and the background as well?	How much color a person uses in the entire picture. Does the artist use a color only to outline a form, or does he or she color in the forms and the background as well?
Scale #2: Color Fit	Are the colors used appropriate to the objects portrayed?	Are the colors used appropriate to the objects portrayed?
Scale #3: Implied Energy	How much energy was spent to make the drawing? Consider the energy necessary to switch colors.	How much energy was spent to make the drawing? Consider the energy necessary to switch colors.
Scale #4: Space	How much of space was used for the drawing?	How much of space was used for the drawing?
Scale #5: Integration	Is there a relation between each family member? Are they integrated or do the members seem unrelated to each other?	Is there a relation between the person, the tree, and the apple?
Scale #6: Logic	Does the picture show a family doing something?	Do the parts of the picture fit the task?
Scale #7: Realism	Are the items recognizable? The more realistic the elements are, the higher the rating would be.	Are the items recognizable? The more realistic the elements are, the higher the rating would be.

Scale #8: Problem-Solving	How well does the artist integrate all family members? Are all of the family members participating in an activity?	How does the person get the apple out of the tree?
Scale #9: Developmental Level	How would the picture be rated according to Lowenfeld's developmental levels?	How would the picture be rated according to Lowenfeld's developmental levels?
Scale #10: Details of Objects and Environment	Are there more details in the environment other than the family members? How detailed are they?	How many extra items are there in the drawings? How detailed are they?
Scale #11: Line Quality	How much control did the artist have when drawing the lines in the picture?	How much control did the artist have when drawing the lines in the picture?
Scale #12: Person	Do the family members look like people?	Does the person look like a person?
Scale #13: Rotation	How much rotation is there for the people and objects in the drawing? Measure the amount of tilt that the people and objects show.	How much rotation is there? Score only the person or the tree on this scale. Decide which of these elements appear to tilt more.
Scale #14: Perseveration	Does it seem that any of the lines or elements was drawn repeatedly and without conscious control?	Does it seem that any of the lines or elements was drawn repeatedly and without conscious control?

APPENDIX G: Rater Agreement Bar Graphs

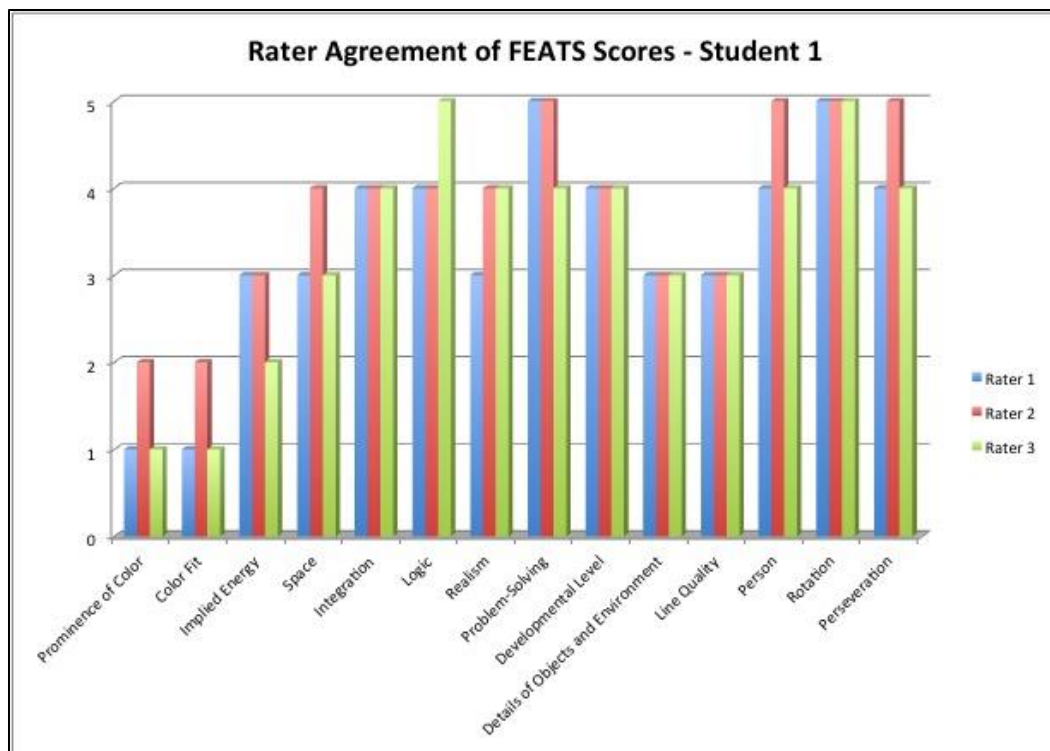


Figure G17. Rater agreement of FEATS scores, Student 1.

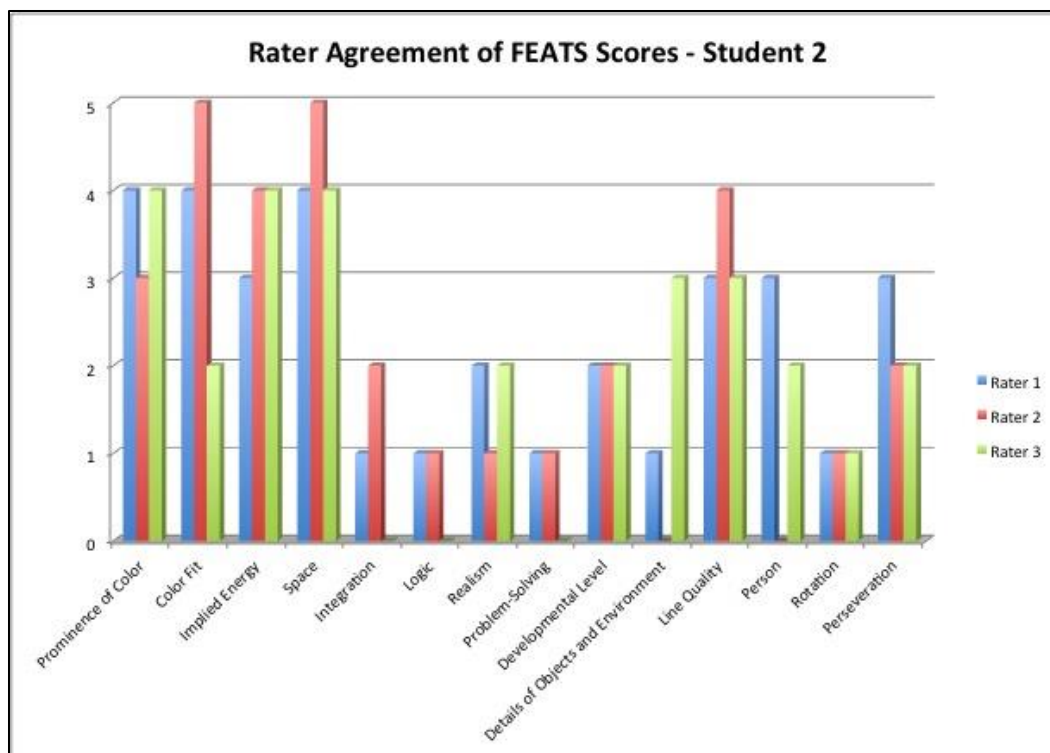


Figure G18. Rater agreement of FEATS scores, Student 2.

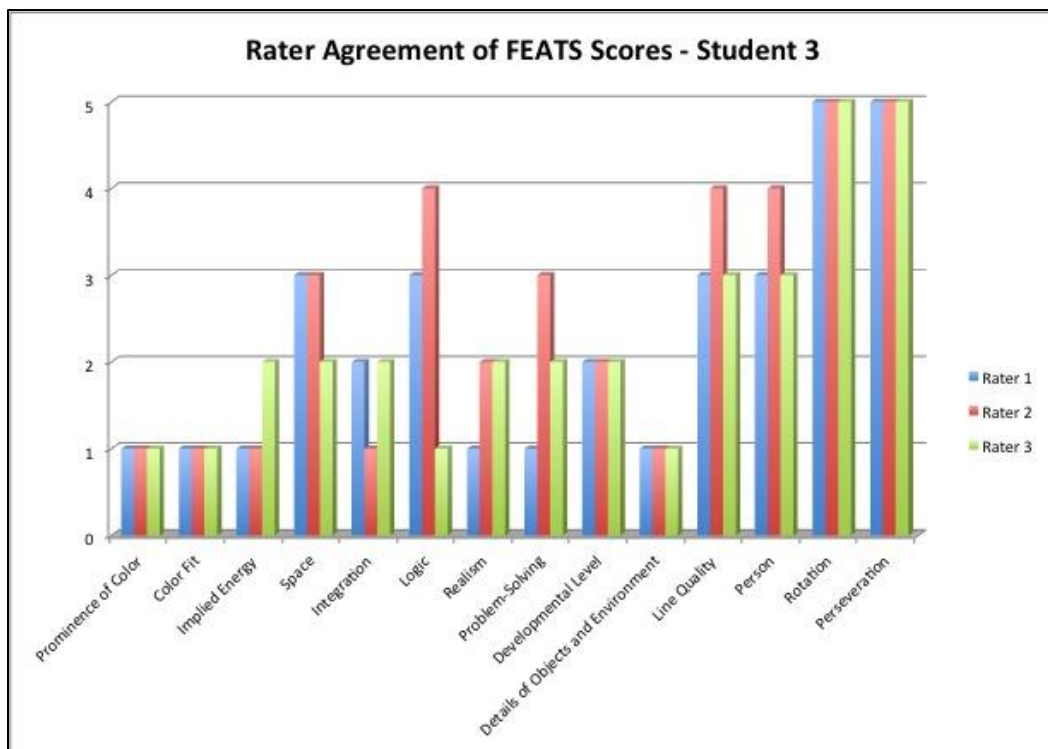


Figure G19. Rater agreement of FEATS scores, Student 3.

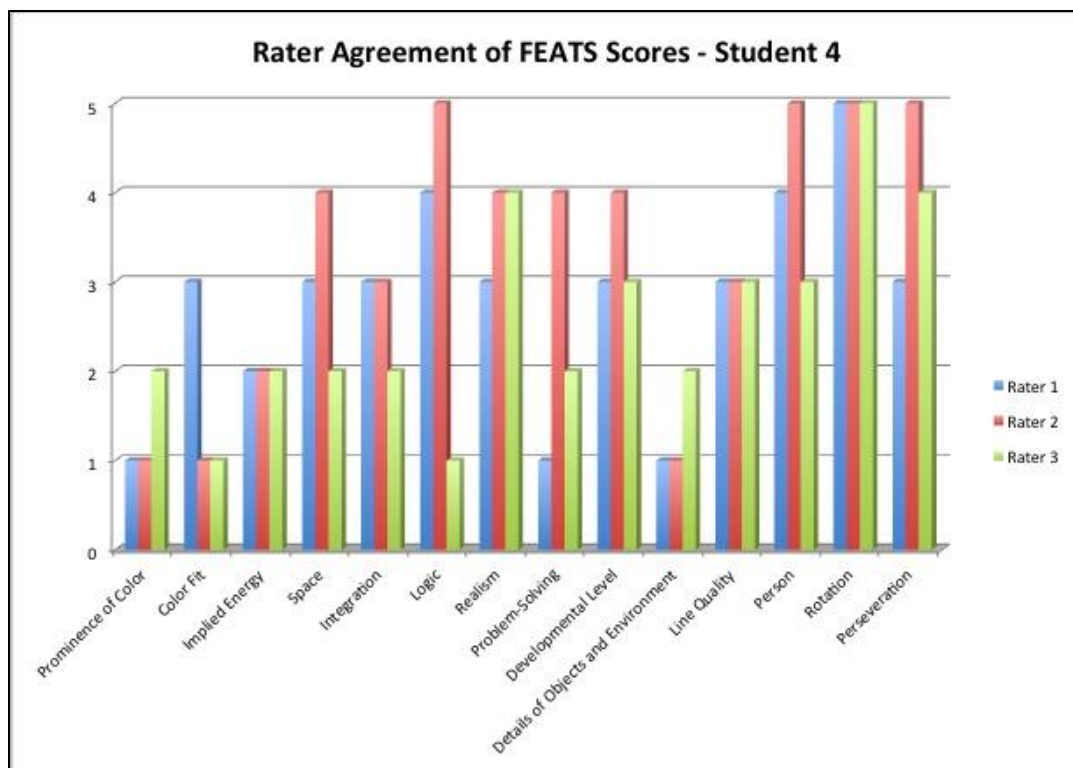


Figure G20. Rater agreement of FEATS scores, Student 4.

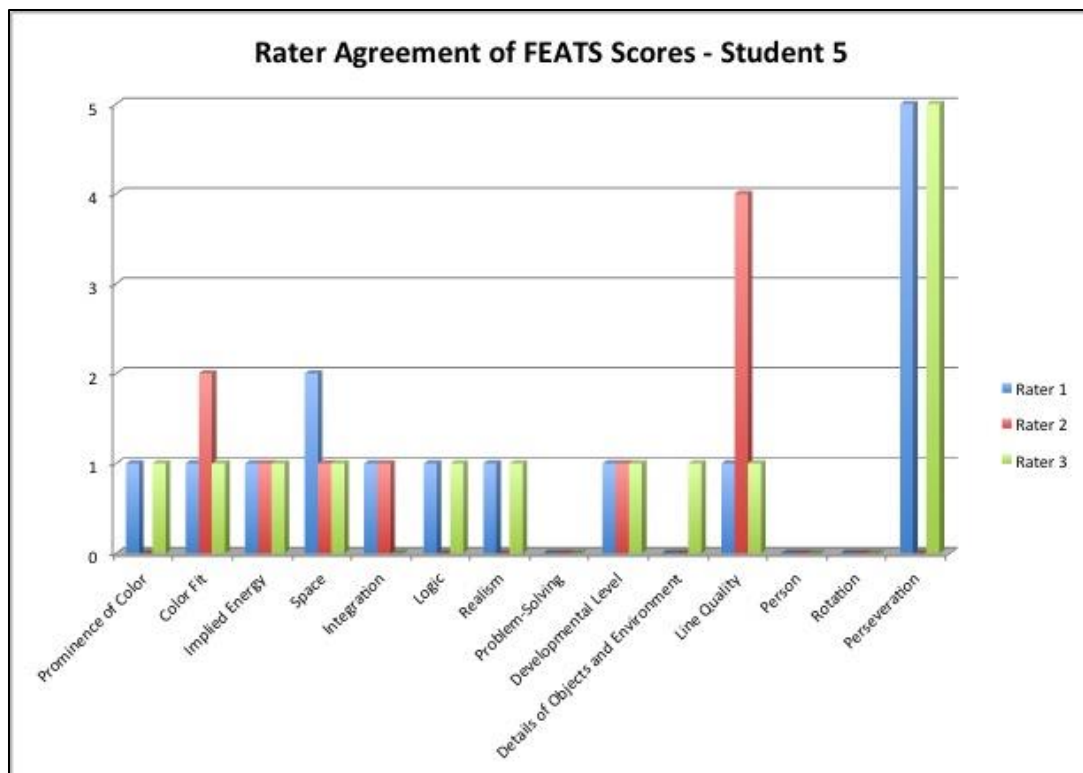


Figure G21. Rater agreement of FEATS scores, Student 5.

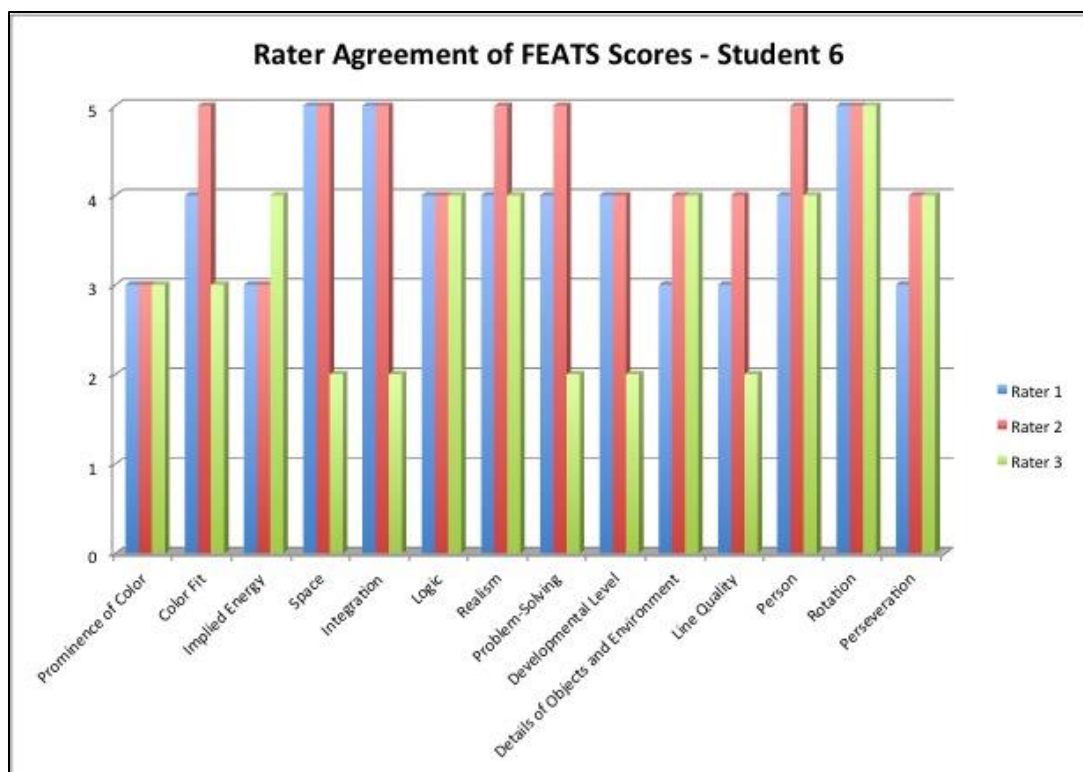


Figure G22. Rater agreement of FEATS scores, Student 6.

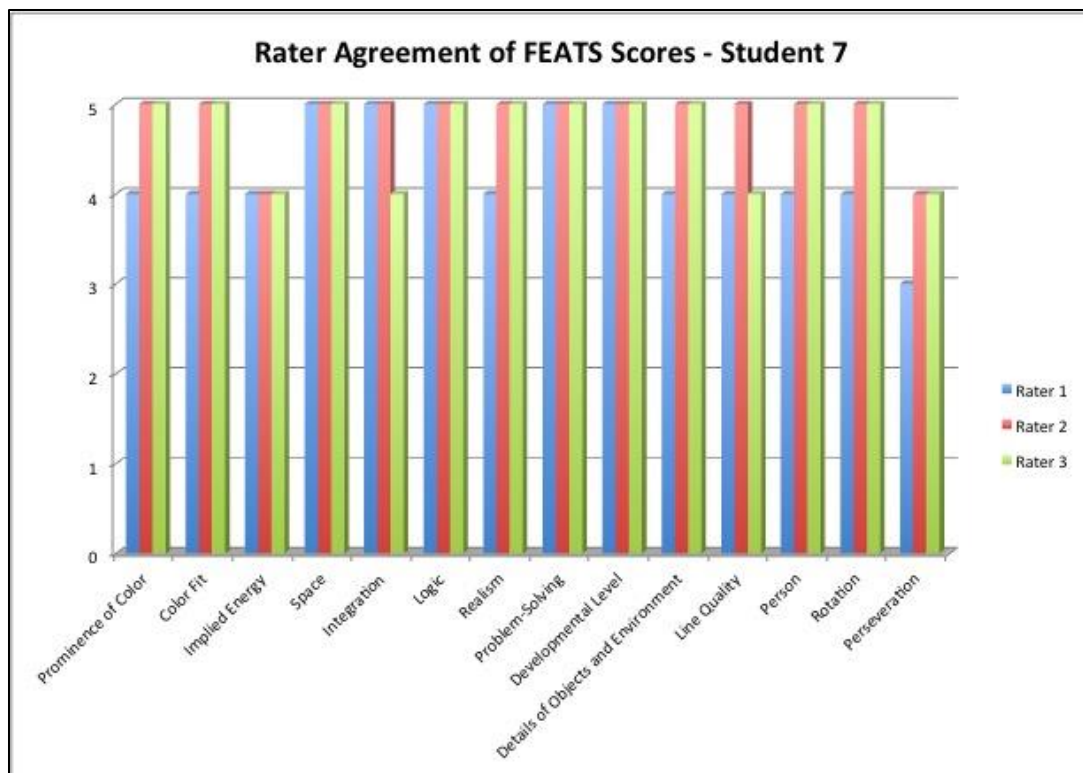


Figure G23. Rater agreement of FEATS scores, Student 7.

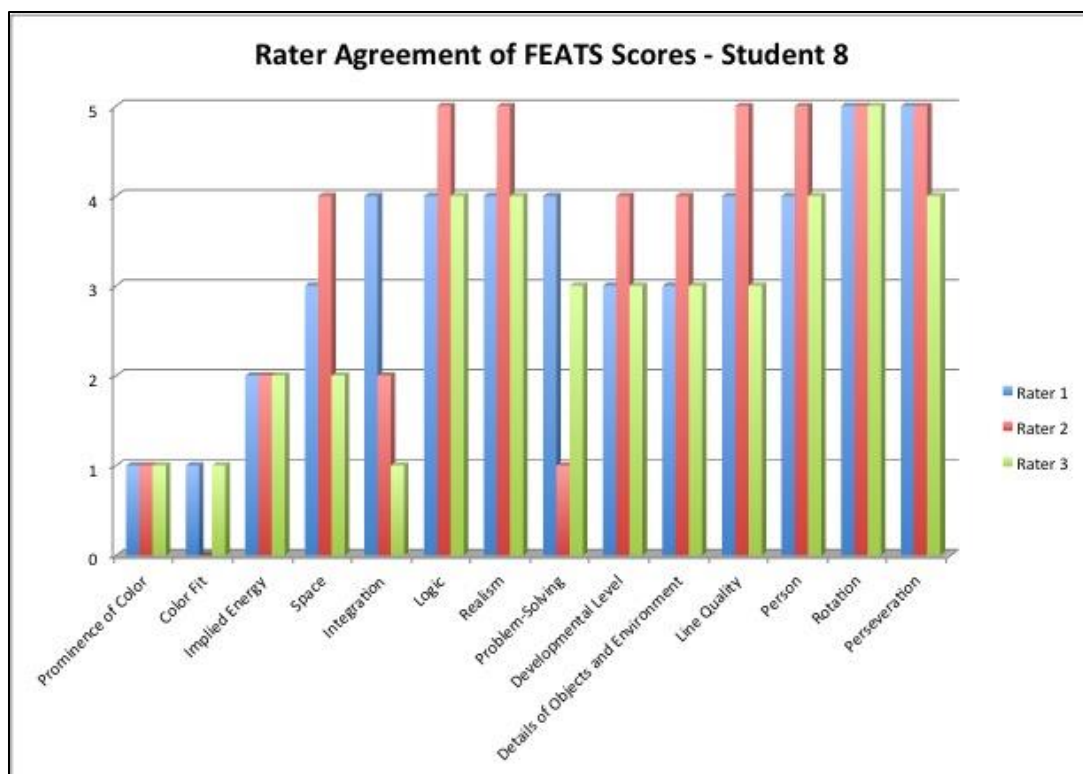


Figure G24. Rater agreement of FEATS scores, Student 8.

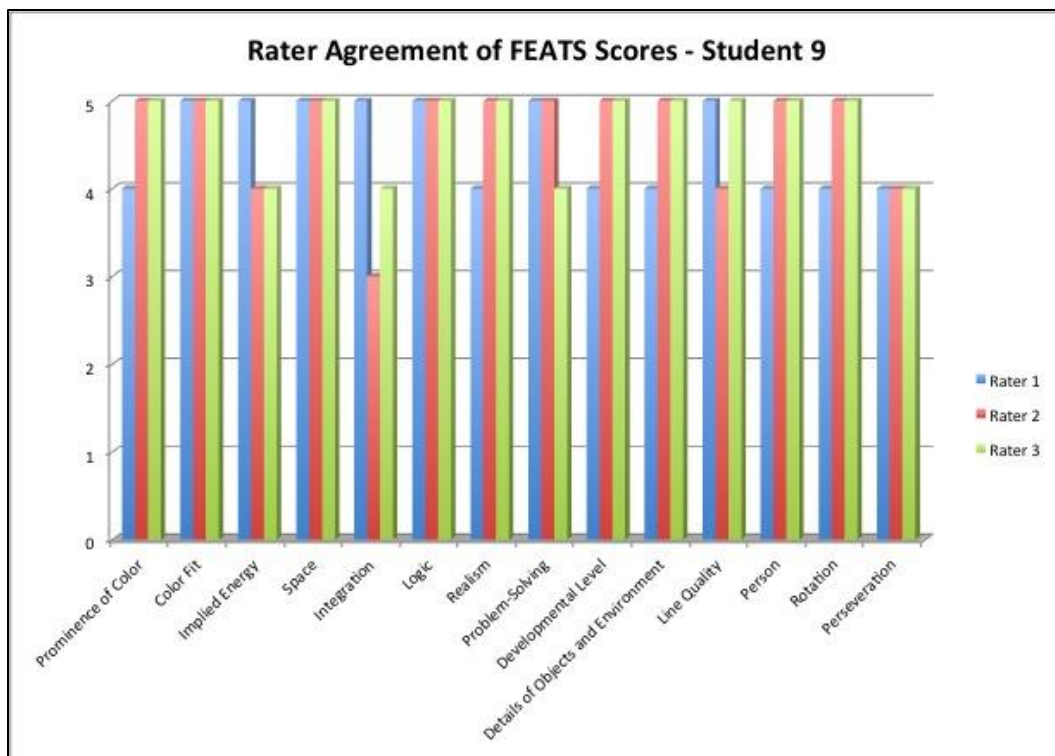


Figure G25. Rater agreement of FEATS scores, Student 9.

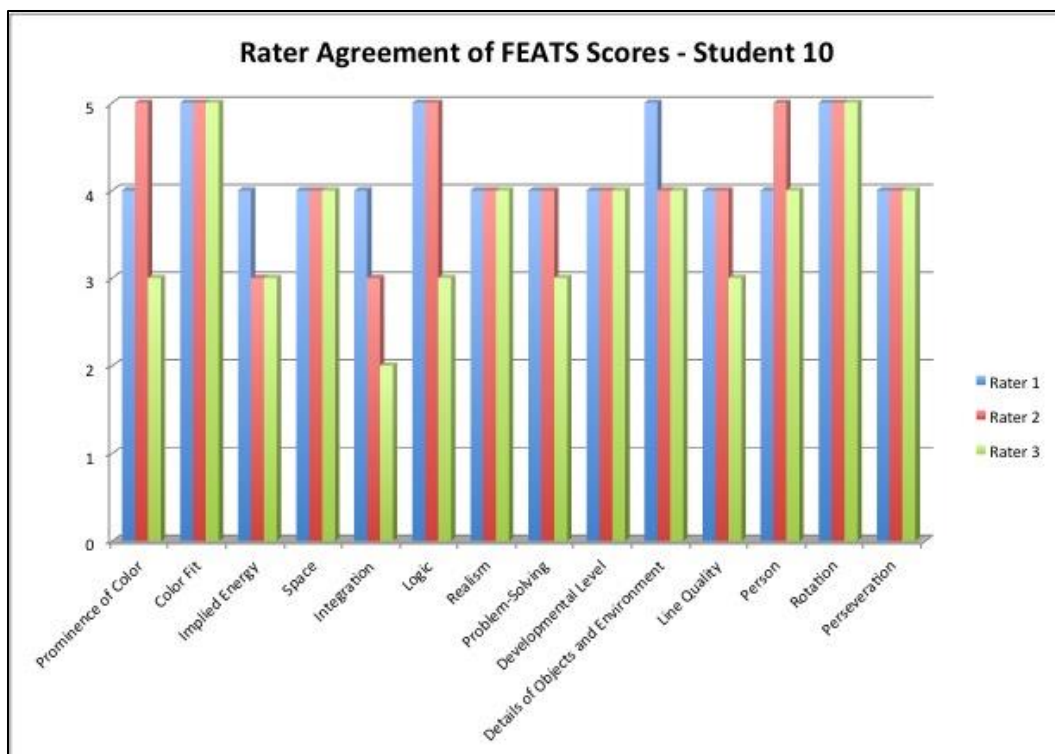


Figure G26. Rater agreement of FEATS scores, Student 10.

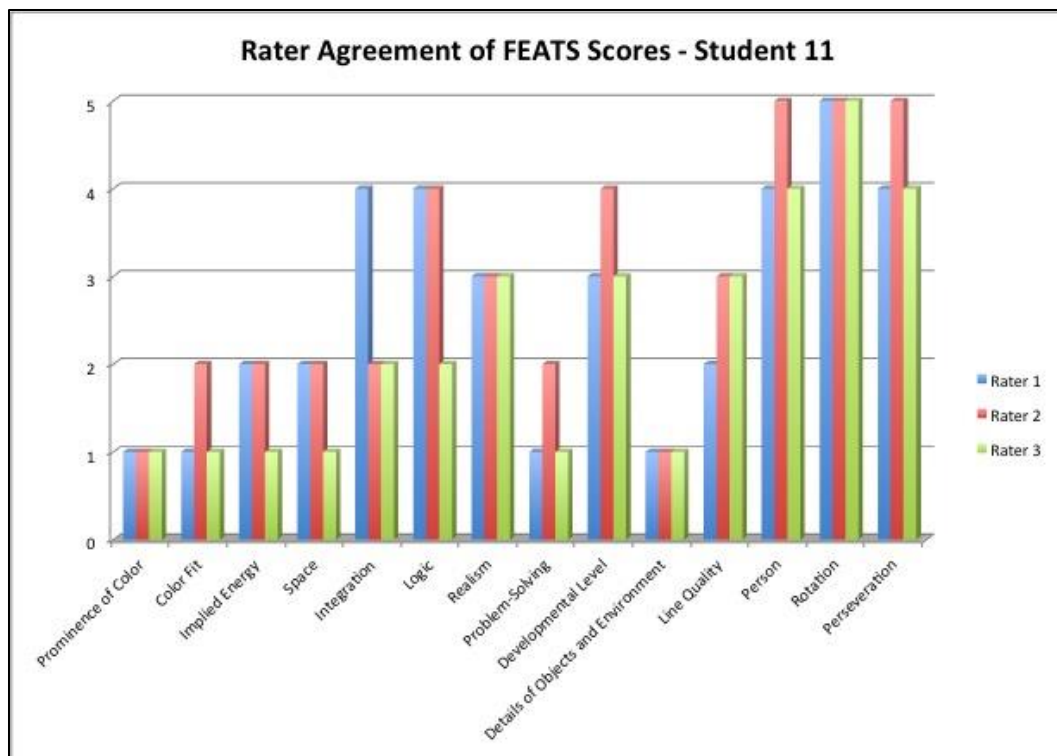


Figure G27. Rater agreement of FEATS scores, Student 11.

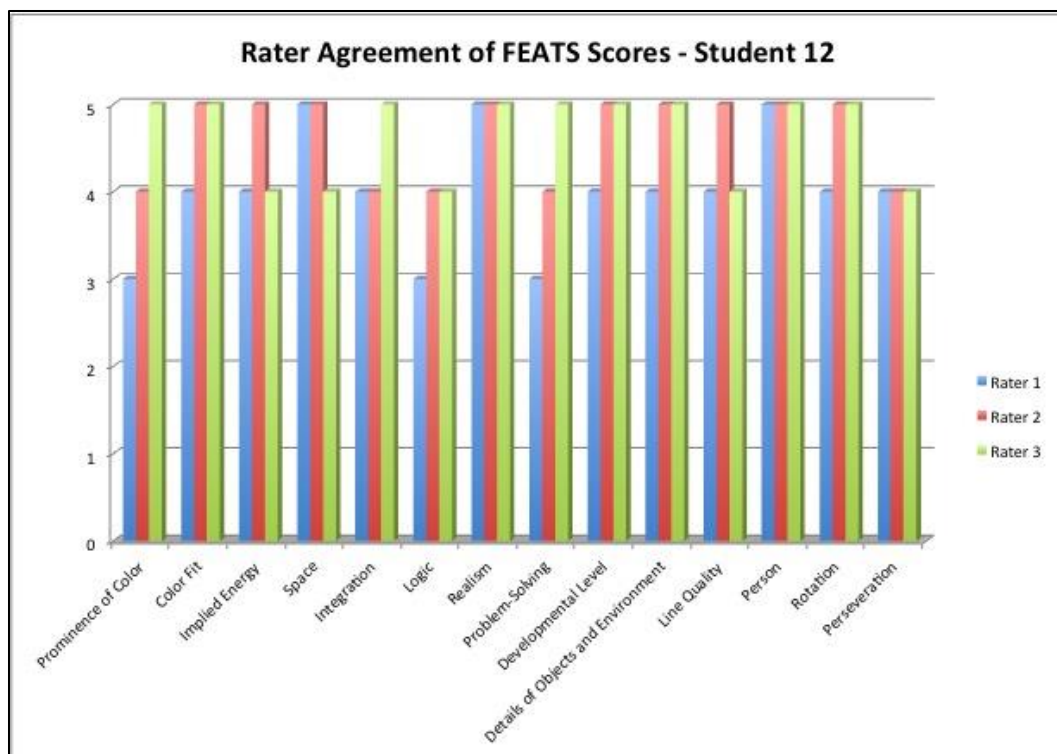


Figure G28. Rater agreement of FEATS scores, Student 12.

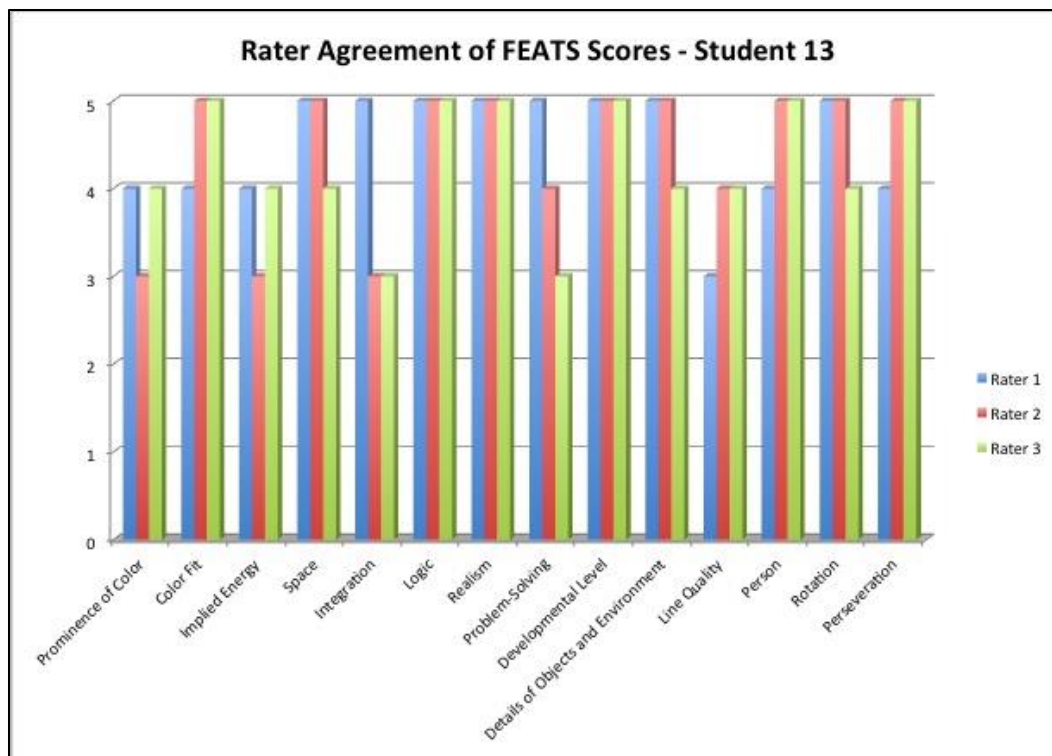


Figure G29. Rater agreement of FEATS scores, Student 13.

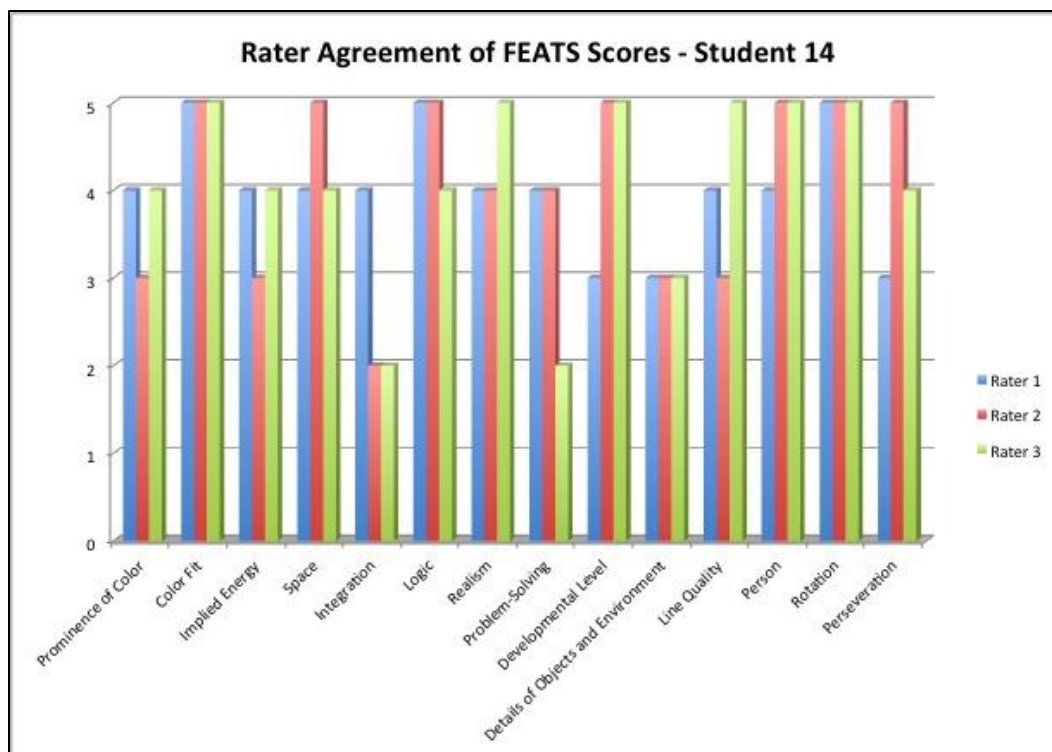


Figure G30. Rater agreement of FEATS scores, Student 14.